"The Prehistoric World: or Vanished Races"

By E. A. Allen

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Continued

Illustration of Arrow Points.----------

Implements of stone are of course abundant. But men, when in the culture of the Stone Age, having a common material to work upon, and under the pressure of common needs, have everywhere provided similar forms. For this reason it is hard to find distinctive points of difference between implements of stone of Mound Builders' work and a series of similar implements the work of Indians. We are assured, however, that when examining a series of each, those of the Mound Builders display a superior finish. The preceding wood-cut represents a collection of arrow-points found in the mounds, but they are not particularly so distinguishable from specimens found on the surface. Great numbers of arrow-points are occasionally found on altars. Here we have a view of one of the stone axes fashioned by the hands that heaped the mounds. It is certainly a very fine specimen.

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Illustration of Ax found in a Mound.----------

The Mound Builders must have had all the varieties of stone implements common to people in their stage of culture, such as axes, fleshers, and chisels. They also must have possessed mortars and pestles for grinding corn, and some implements did duty as hoes and spades. We represent in a group a collection of weapons and implements from the mounds and stone graves of Tennessee. All these articles are finely finished. One of the axes has a hole bored through it. One of them is further provided with a stone handle, and is characterized as being the "most beautiful and perfect stone implement ever exhumed from the aboriginal remains within the limits of the United States."

Illustration of Weapons of Stone from Tennessee. (Smith Inst.)--

People in the culture of the Stone Age make but very rare use of metal, as metals are to them simply varieties of stone, much

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less useful for their purpose than the different kinds of flints, except for ornaments. From the altar mounds, near Cincinnati, were taken ornaments of silver, copper, iron and traces of gold, all of which had been worked into their present shape by simply hammering. The iron, it should be remarked, was meteoric iron, which can be hammered as easily as native copper. We have already remarked that about the only native iron is obtained from such sources. Copper was utilized for a great variety of purposes.

Illustration of Copper Ax.----------

We give a cut of a copper ax found in one of the Ohio mounds. Copper axes have lately been found quite frequently in mounds near Davenport, Iowa, and in most cases before being deposited in the mounds, they had been wrapped in cloth. Copper ornaments are a more common find. Bracelets, beads, and ear ornaments are numerous. Our next cut represents some very fine bracelets found in a mound near Chillicothe, Ohio, Copper tools and weapons have been found quite frequently on the surface, but we are not sure in this case whether they are not the work of recent Indians.

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The early explorers noticed the presence of copper ornaments among the Indians. "When Henry Hudson discovered, in 1609, the magnificent river that bears his name, he noticed among the Indians of that region pipes and ornaments of copper."
The account says: "They had red copper tobacco pipes, and other things of copper they did wear about their necks."
De Soto also noticed among the Southern Indians axes of copper. Other accounts could be quoted showing that the Indians were well acquainted with copper. The fact is, in this matter also, it is impossible to draw a dividing line between relics of the Mound Building tribes and the Indians. However, the Mound Builders were certainly acquainted with copper, but to their minds it was only a singular stone, one that they could hammer, into a desired shape.

Illustration of Copper Bracelets.----------

Where did they obtain their copper? We are all aware that in this country great supplies of pure copper exist near the southern shore of Lake Superior, and there is a peculiarity about the copper found there, that is, the presence of small

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pieces of silver with the copper. This is a very singular mixture, and we are not aware of its occurrence elsewhere. It would trouble the best chemists to explain it. From this fact we are enabled to identify articles of copper derived from that source, and to that region we can trace the copper from which are formed most of the copper implements and ornaments found in this country. It is also noticeable that the nearer we get to this region the more numerous are the finds of articles of copper. More are reported from Wisconsin than the rest of the United States put together.

This leads us to a very interesting subject. In 1848 Mr. S. 0. Knapp, agent of the Minnesota Mining Company on the northern peninsula of Michigan, discovered that the modern miners were but following in the footsteps of some ancient people who had mined for copper there some time now far past. The general conclusion is that these old miners were Mound Builders, but here the evidence of their presence is not found in the existence of mounds and earthworks, but of pits and excavations, which, by the slow accumulation of years, had become filled to near the surface with *debris* of various kinds. Many had noticed these little pits and depressions without suspecting they had aught to do with the presence of man. The hollows made

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by large trees, overturned by the wind, frequently left as well marked depressions as these excavations.

We have abundant proof that these old miners were practical workmen. They evidently did not neglect the most trifling indication of metals. They made thorough research and discovered the principal lodes. Our present day miners have long since learned to regard the presence of these ancient pits as excellent guides in this matter. With modern appliances they penetrate far beyond the power of the old workmen. At the Waterbury mine there is in the face of the vertical bluff an artificial opening, which is twenty-five feet wide, fifteen feet high, and twelve feet deep. The materials thrown out in digging had accumulated in front, and on this forest trees common to that region were growing of full size. Some of the blocks of stone which were removed from this recess would probably weigh two or three tons, and must have required the use of levers to move them. Beneath the surface rubbish was discovered the remains of a cedar trough, by which the water from the mines was conducted away. Wooden bowls were found, which were probably used to dip the water from the mine into this trough.

Near the bottom of the pit, shovels, made of cedar, were found,

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shaped much like a canoe paddle, but showing by their wear that they were used as shovels. Although they appeared solid while in water, yet, on drying, they shrunk up, and were with difficulty preserved. A birch tree, two feet in diameter, was observed growing directly over one of these shovels. No marks of metallic tools were observed anywhere about this large pit.

Illustration of Ancient Mine, Michigan.----------

In this case they constructed a sort of a cave, but in many cases they mined open to the air, that is, they simply dug trenches or pits. A row of these ancient pits, now slight depressions, indicate a vein. What they seem to have especially sought after was lumps of copper that they could easily manage and fashion by hammering. They had not discovered the art of melting. When they found an unusually large piece, they broke off what they could by vigorous hammering. In one case they found a mass weighing about six tons of pure copper. They made an attempt to master this piece. By means of wedges they had got it upon a cob-work of round logs or skids, six or eight inches in diameter, but the mass was finally abandoned for some unknown

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reason after breaking off such pieces as they could until the upper surface was smooth. This mass rested on the framework of logs while the years came and went, until, after the lapse of unknown time, the white men once more opened the old mine.

On the rubbish in front of this mine was standing the stump of a pine tree ten feet in circumference. These ancient mines are found not only on the main-land, but on the islands off the coast as well. The only helps they seem to have employed was fire, traces of which are found everywhere, and stone mauls and axes. The mauls consist of oblong water-worn bowlders of hard tough rock, nature having done every thing in fashioning them except to form the groove, which was chiseled out around the middle. Some copper implements were also found.

Col. Whittlesey, from whose writings we have drawn the foregoing, concludes that these mines were worked by the Mound Builders. As he finds no traces of graves or houses, or other evidence of a protracted stay, he thinks they were worked only through the Summer season of the year by bands of workmen from the south.

As to what caused the abandonment of the works we do not know.

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It might have been an impulse of their race hurrying them on to some distant migration; or, more probably, pressed by foes from without, they were compelled to abandon their ancient homes. Whatever the cause was, nature resumed her sway. Forest trees crept up to and grew around the mouths of the deserted mines. Col. Whittlesey concludes from the group of trees growing on the top of the rubbish heap that at least five hundred years passed away before the white man came from the south to resume the work of his ancient predecessor.

It is not, however, proven that the Mound Builders were the sole workers of these ancient mines. It is known that the Indians mined for flint. Some of the excavations for this purpose, in what is known as Flint Ridge, in Muskingum County, Ohio, are as marked as the traces of ancient mining in Michigan. Similar appearances are recorded in Missouri. As copper was in demand among the Indians, and as it is probable that they obtained much of it from the North, they may have continued to work the ancient copper mines until comparatively recent times. Mr. Lapham believes that the progenitors of the Indian tribes found dwelling in the regions near these mines, carried on mining operations there. Dr. Rau thinks it probable that small bands of various Northern tribes made periodical excursions to

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the locality, returning to their homes when they had supplied themselves with sufficient quantities of the much-desired metal. The fact that many of the modern Indian tribes knew nothing about these mines is not of much weight, when we reflect how easily a barbarian people forget events, even those of a striking nature.

We are apt to judge the culture of a people by the skill they display in works of arts. The article on which the Mound Builder lavished most of his skill was the pipe. This would show that with them, as with the modern Indians, the use of the pipe was largely interwoven with their civil and religious observances. In making war and in concluding peace, it probably played a very important part. "To know the whole history of tobacco, of the custom of smoking, and of the origin of the pipe, would be to solve many of the most interesting problems of American ethnology."

The general decoration consisted in carving the bowl of the pipe into the shape of some animal or bird. In some instances we have carved representations of the human head. Such as these are of particular interest and value, as they are probably faithful representations of the features of the Mound Builders. This is a

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fine specimen found in one of the altar mounds in Ohio. The method of wearing the hair is worthy of notice. The holes placed in a row encircling the forehead and coming down as low as the ears, were once filled with pearls. In some they still remained when found, though they had been burned in the fire. The lines upon the face obviously imitate the custom of tattooing the countenance.

Illustrations of Sculptured Face and Face of a Female.-----

Scholars have called attention to the fact that Humboldt discovered in Mexico a small statue which he supposed represented an Aztec priestess. This statue had sculptured upon its forehead a row of pearls, worn in the same manner as is represented in this pipe. This is another pipe of great interest, and is supposed to represent the head of a woman. The countenance is expressive, the eyes prominent, and the lips full and rounded. We must notice again the headdress. While the faces are of Indian type, the method of wearing the hair is different from that of the typical Indian of the North.

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Illustration of Beaver.----------

The animal forms into which the pipe-bowls are carved, are also full of interest. This is not so much on account of animal forms themselves as the insight we gain as to the artistic skill of the people who fashioned the pipes, and in various ways learn of bits of customs and manners peculiar to them. Here we have figured a pipe, the bowl of which is carved to represent a beaver. No one need hesitate as to the animal which the carver had in mind. It is represented in a characteristic attitude, and has the broad, flat tail of its species. It must have required no little skill and patient labor to work a rough stone into this finished pipe, especially when we remember that the maker had no edged tools with which to work.

Illustration of Otter.----------

We can not always determine the animal which the artist had in mind. In this illustration we have figured such a pipe.

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Considerable discussion has arisen as to the animal represented. Some cases of this nature have been thought to show either migration from a distant country on the part of the maker or else an extended system of trade.

Squier and Davis, who first figured it, supposed it to represent a manatee, or sea-cow. This animal is essentially a tropical species, the only known place where it was found in the United States being Florida. From the presence of this carved specimen, found a thousand miles to the north, some interesting queries, as the origin of the mound-building tribes, and the state of life among them, were raised. It is almost certain, however, that the animal intended to be represented was the otter.

Illustration of Birds on Pipes.----------

The most general form of sculpture was that of birds, and we find specimens of almost all the common varieties. In this group we recognize the tufted heron striking a fish; the eagle, or hawk, tearing a smaller bird; the swallow, apparently just ready to fly; and in the last figure, one that has given rise to a

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good deal of discussion. Some think from the circumstance of its having a very large bill, toes pointing behind as well as before, that it represents a toucan, which, if true, would make it a most interesting specimen. But cautious scholars conclude that the "figure is not of sufficient distinctness to identify the original that was before the artist's mind." And therefore it is not wise to make this specimen the subject of a far-reaching speculation.

It may be of interest to inquire whether the Indians made pipes as tastefully ornamented as those we have described. We should notice that all the pipes here described are from one very limited locality in Ohio, and that is the valley of the Scioto, the same section of country where were found the great inclosures of a mathematical shape. We have no reason for supposing that the Mound Builders generally throughout the Mississippi Valley had this artistic skill. We have seen nowhere any thing to show a superiority for them in this respect. Whatever conclusion can be drawn from those pipes, applies only to the tribe in the Scioto Valley. It is believed they do constitute a peculiar class by themselves. As works of art, there are but few aboriginal relics of North American origin their equal.

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We would also refer to the fact that most of these specimens were obtained from one altar-mound. We do not know what ceremonies were performed around this altar, but if it were a place of burial or cremation, they might have been the obsequies of some distinguished maker of pipes. That such a person would be the recipient of honor, is not singular, for "the manufacture of stone pipes, necessarily a painful and tedious labor, may have formed a branch of aboriginal industry, and the skillful pipe carver probably occupied among the former Indians a rank equal to that of the experienced sculptor in our times." Among the Ojibway Indians, we are told, are persons who possess peculiar skill in the carving of pipes, and make it their profession, or at least the means of gaining, in part, their livelihood. One "inlaid his pipes very tastefully with figures of stars, and flowers of black and white stones. But his work proceeded very slowly, and he sold his pipes at high prices." So we see how cautious we must be about drawing inferences from this peculiar class of pipes found in one limited locality.

The knowledge of how to manufacture pottery is justly regarded

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as a turning point in the advance of primitive man along the weary road that brings him at last to civilization. At this point he ceases to be a savage, and enters the confines of Barbarism. The skill shown in using this knowledge is one of the many things we have to take into consideration in determining the rank of a people in the scale of enlightenment. The Mound Builders were evidently quite well along in the potter's art; and as they have left behind them many examples of their work, we must try and acquaint ourselves with some of the more important varieties.

Illustration of a Group of Clay Vessels.----------

This illustration is of a group of clay vessels of the bowl pattern, found in mounds in different parts of the Mississippi Valley. In one of these we see a good example of the style of ornamentation by means of incised lines. In the duck-headed vessel we have a representation of a class of vessels common in Missouri and Tennessee. Not unfrequently one or both of the handles of vessels of this class is in the form of a human head instead of that of an animal. Our next illustrations represent a

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group of such specimens. Judging from the skill with which they imitated animals, it is not unreasonable to believe that in these faces we have rude likenesses of the people who made them.

Illustration of Bowls with Human Faces.----------

The two bottle-shaped vessels here figured, are from mounds in Louisiana. As will be noticed, the ornamentation is quite artistic. The ware is of a good quality, and they are good examples of the Mound Builders' art. The form with the long neck is perhaps a water-cooler. When filled with water, and allowed to stand, some of the water passes through the pores, and evaporating, keeps the surface of the vessel cool.

Illustration of Bottle-shaped Vessels. (Smith. Inst.)----

They also made some vessels of large size to serve for cooking purposes. On some of the larger vessels the imprint of woven weeds and willows of a basket on the outer surface leads to the

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belief that such vessels were formed or moulded within baskets. Many large pots and urns, however, were made without this aid. Some large urns were used for burial purposes. In a Michigan mound an urn about three feet in height had been so used. It was standing upright, and into it the whole skeleton of a man had been compressed, and a closely-fitting lid covered the top. Very large, shallow vessels were used to manufacture salt--that is, they were filled from some salt-spring, and then the water was evaporated, leaving the salt. In localities near salt-springs, thick fragments of rude earthenware have been found that must have come from vessels as large as barrels.

Illustration of Water Cooler.----------

In the next group we have representations of a singular class of vessels. In some cases the mouth and neck of the vessel is shaped in imitation of animals. In the smallest one we recognize the head of a man, with an opening in the back of the head. Many vessels of this form are known, and a great many different animal heads are represented. The fish-shaped vessel is a curious one. The one figured evidently represents a sun-fish.

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The long vase or jug is in the shape of a child's leg, with an opening in the heel.

Illustration of Pottery Vessels. (Smith. Inst.)--------

Some very beautiful vessels of the character of those we have figured, have been found in Missouri. One enthusiastic explorer says, "Perhaps we have very few modern artists who could equal those ancient pottery makers in taste, skill, curious design, and wonderful imitation of nature. Birds, beasts, fishes, even the shells on the river shore, have an exact counterpart in their domestic utensils." "While digging in one of these pottery mounds in Missouri, we unearthed a large tortoise. We thought it was alive, and seizing it, to cast it into the woods for its liberty, we were suddenly surprised to find our tortoise was an earthen vessel in that shape. In the same mound we uncovered a huge shell--the single valve of a unio. Closer inspection revealed that it was a perfect earthen vessel. Following these came a perfect fish, exhibiting, to our astonishment, the scales, fins, and peculiarities of that species of fish in detail."

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We must leave this interesting part of our subject. An entire volume would scarcely do justice to it, but for the sake of comparison, we must inquire as to the state of this art among the Indian tribes. It seems that before the arrival of the whites, the Indian tribes throughout North America, with few exceptions, were apt potters. The whites, however, soon supplied them with superior utensils of metal, so, that the majority of the Eastern tribes soon lost the knowledge of the art.
It lingered longer among the tribes of the South, and of the interior, and even to this day the Pueblo tribes of New Mexico and Arizona make an excellent article of pottery.
Early travelers wrote in high terms of the skill of the Southern Indians in this matter. Du-Pratz thought so highly of the work of the Natchez Indians that he had them make him an entire dinner set.

Catlin, speaking of the Mandan Indians, says the women of that tribe made great quantities of dishes and bowls, modeled after many forms. He says they are so strong and serviceable that they cook food in them by hanging them over the fire, as we would an iron pot. "I have seen specimens," he continues, "which have been dug up in Indian mounds and tombs in the Southern and

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Middle States, placed in our Eastern museums, and looked upon as a great wonder, when here this novelty is at once done away with, and the whole mystery: where women can be seen handling and using them by hundreds, and they can be seen every day in the summer, also, moulding into many fanciful forms, and passing them through the kilns, where they are hardened."

Dr. Rau, speaking of the artistic skill of the Indian potters, as shown by numerous remains gathered in Illinois, does not hesitate to assert, after personal examination of Mound Builders' pottery, that the Indian relics were in every respect equal to those specimens exhumed from the mounds of the Mississippi Valley. Lapham, speaking of fragments of Mound Builders' pottery in Wisconsin, says, "They agree in every respect with fragments found about the old Indian villages."

The culture of a people is also determined by their knowledge of agriculture. The savage depends entirely upon hunting and fishing for subsistence. A knowledge of horticulture, of domestic animals, and of agriculture, even though rude, are each and all potent factors in advancing man in culture. So we must inquire as to the traces of agricultural knowledge observable among the remains of the Mound Builders. Some writers speak in

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quite glowing terms of the enormous crops they must have raised for their populous cities. The fact is, that while it is doubtless true that they practiced agriculture, yet we have no reason to suppose it was any thing more than a rude tillage, such as was practiced among the village Indian tribes. This is evident from the tools with which they worked.

Illustration of Agricultural Implements. (Smith. Inst.)----

In a few cases copper tools have been recovered which may have served for digging in the ground, but in most cases their art furnished them nothing higher than spades, shovels, picks, and hoes made of stone, horn, bone, and probably wood. In this cut are specimens of such agricultural tools. These were doubtless furnished with handles of wood. The notched one was perhaps provided with a handle at right angles to it, so as to constitute a hoe. That we are right in regarding these implements as agricultural tools, is shown not only by their large size, but also by the traces of wear discovered on them. We must admit, however, that agriculture carried on with such tools as these, must have been in a comparatively rude state.

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In this connection we must refer to the garden beds noticed in some places. We read that in Western Michigan the so-called garden beds are a distinguishing feature of the ancient occupation, often covering many acres in a place, in a great variety of forms, both regular and grotesque. These seem from the above account to be very similar to the garden beds of Wisconsin. Dr. Lapham tells us that in the latter State they consist of low, broad, parallel ridges, as if corn had been planted in drills.

The average four feet in width, and the depth of the walk between them is six inches. Traces of this kind of cultivation are found in various parts of the State. We are also referred to the presence of garden mounds in Missouri, but in this case the low mounds are of the same mysterious class that Prof. Forshey says occur by millions in the South-west, and may not be the work of man. Just what the connection is between the garden beds and the Mound Builders is hard to determine. Mr. Lapham thinks that those in Wisconsin were certainly later in date than the mounds. He observed that they were frequently constructed right across the works of the Mound Builders. This would seem to imply that the makers were not one and the same people.

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As to the government and religion of the Mound Builders, all is conjecture. On both of these points a great deal has been assumed, but when we try to find out the grounds on which these theories rest we quickly see how little real foundation there is for any knowledge on this subject. If we are right in our views as to the effigy mounds of Wisconsin, then a sort of animal worship prevailed. Whether the great inclosures in the Scioto Valley were of a religious nature or not is very doubtful.
The great serpent mound was probably an object of worship.
The assertion is quite frequently made that the Mound Builders were sun worshipers, which may be correct, but we must observe that we have no proofs of it in the works they have left.
We judge it to be true only because sun-worship was probably a part of the religion of a large proportion of the Indian race, and because we find special proofs of its existence among some of the Southern Indians who are supposed to be closely related to the Mound Builders.

Illustration of Idols. (Smith. Inst.)----------

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As we approach the South, we meet with what are supposed to be rude and uncouth idols, but they have not been found under such circumstances as to make it positive that they belonged to the Mound Builders. In this illustration we have two idols, considered to be genuine relics of the stone-grave people of Tennessee. The first one is an Aztec idol found at Cholula, and introduced here simply for comparison. What position these idols held in connection with the religion of the race, we are not prepared to say.

Similar remarks might be made as to the system of government. A number of writers, taking into account the immense labor involved in constructing some of the works, have insisted that the people must have lived under a despotic form of government, one in which the state had unlimited power over the lives and fortunes of its subjects.

There is no real foundation for such views, and we think they are misleading. No one doubts but that the Mound Builders were living in a tribal state of society. If so, they doubtless had the usual subdivisions of a tribe. This point we remember afforded us some insight into the meaning of the effigy mounds of Wisconsin.

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This would imply the government by the council, and while the rulers may have been hereditary, the officers of the tribe were probably elective, and could be deposed for cause. We do not mean to assert that this is an exact picture of the state of government of the Mound Builders, because our knowledge on this point is not sufficient to make such a positive statement, but it is far more likely to be true than the picture of a despotic government, ruling from some capital seat a large extent of country, holding a court with barbaric pomp and circumstances such as some writers would have us believe.

We hope our readers have not been wearied by this somewhat extended investigation of the Mound Builders. Every storm that beats upon their works tends to level them. The demands of our modern life are fast obliterating the remaining monuments and, indeed, it is now only those which are situated in favorable localities, or are massive in construction, that are left for our inspection. But these nearly obliterated records of the past are of more than passing interest to us as monuments of the prehistoric times of our own country. We wander over these ruins and find much to interest us, much to excite our curiosity. The purposes of many are utterly unknown. Some, by their great

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proportions, awaken in us feelings of admiration for the perseverance and energy of their builders. But when we investigate the objects of stone, of clay, and of copper this people left behind them, we notice how hard it is to draw a dividing line between them and the Indians.

In fact, there is no good reason for separating them from the Indian race as a whole. We do not mean to say that they were not, in many respects, different from the tribes found in the same section of the country by the early explorers, though, we ought, perhaps, to confine this remark to the central portion of the country occupied by these ancient remains. But the American of to-day differs from the American of early Colonial times. The miserable natives of Southern California were Indians, but very different indeed from the ambitious, warlike Iroquois, who displayed so much statesmanship in the formation of their celebrated league. In another chapter we shall discuss this part of our subject, as well as the question of the antiquity of the ruins.

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(3) Force: "Some Considerations on the Mound Builders," p. 64; "Am. Antiquarian," March, 1884, pp. 93-4; "10th Annual Report, Peabody Museum," p. 11.

(4) Short's "North Americans of Antiquity", p. 28.

(5) Squier and Davis's "Ancient Monuments," p. 105.

(6) Foster's "Prehistoric Paces," p. 148.

(7) Squier's "Aboriginal Monuments of New York," Smithsonia Contribution No. 11, p. 83.

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(9) Foster's "Prehistoric Races," p. 121.

(10) "They are numbered by millions." Ibid.

(11) Prof. Forshey could frame no satisfactory hypothesis of their origin. Ibid, p. 122.

(12) "Native Races," Vol. IV, pp. 739 and 740.

(13) Smithsonian Rep., 1870, p. 406.

(14) Narrative of U.S. exploring expedition during the years 1838-42, Vol. IV, p. 334.

(15) Prof. Gibbs in Frank Leslie's Monthly, August, 1883.

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(16) "Ancient Monuments," p. 139.

(17) Jones's "Explorations in Tennessee," p. 15.

(18) "Ancient Monuments," p. 143. Explorers for Bureau of Ethnology so report it in the South. Prof. Putnam, who has certainly had great experience, says he has always found the layers to be horizontal.

(19) "Sixteenth Annual Report Peabody Museum," p, 171. An ornament shaped to resemble the head of a wood-pecker, made of gold, derived from some Spanish source, was found in a mound in Florida. This particular mound must have been erected after the discovery of America. ("Smithsonian Report," 1877, p. 298, *et seq.*)

(20) "Sixteenth and Seventeenth Report Peabody Museum." These ornaments were made of hammered iron. This is the first time that native iron has been found in the mounds. (Putnam.)

(21) "Prehistoric Races," p. 178.

(22) J. E. Stevens's Paper, read before the Muscatine Academy of Science, Dec., 1878.

(23) That this was at any rate sometimes the case See "Ancient Monuments," p. 159.

(24) "Peabody Museum Reports," Vol. II, p. 58.

(25) Jones's "Explorations in Tennessee," p. 15. See also "First An. Rep. Bureau of Ethnology," p. 198.

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(26) "Ancient Monuments," p. 169. See also note on same page for another account of a larger number of skeletons.

(27) Short's "North Americans of Antiquity," App. A.

(28) James's "Popular Science," File 1883, p. 445.

(29) "Ancient Monuments," p. 173.

(30) "Ancient Monuments," p. 74.

(31) "Views of Louisiana."

(32) This cut represents the mound as it probably was before the outlines were destroyed by cultivation. It is based on a model prepared by Dr. Patrick for the Peabody Museum.

(33) "Peabody Museum Report," Vol. II, p.473. As this may include some of the wash from the mound, perhaps it would be better to give the real area of the base as over twelve acres.

(34) That is, if we follow the plan.

(35) "Prehistoric Races," p. 107.

(36) "Ancient Monuments," p. 174.

(37) Pickett's "History of Alabama," Vol. I., p. 301.

(38) Carr's "Mounds of the Mississippi Valley," pp. 91, 92; note, 103.

(39) "Ancient Monuments," p. 117. Note.--For the statement made in this text we are under obligation to Prof. Thomas, of the Bureau of Ethnology, who, in answer to a letter of inquiry, kindly furnished the information.

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(40) *"Am. Antiquarian,"* March, 1884, p. 99.

(41) It may be that no mounds were built for signaling purposes alone. The work of erecting mounds was so great that it is quite likely they were always erected for some other purpose, and used only secondarily for signal purposes. Such is shown to be the case with many of the signal mounds in Ohio. Such is the opinion of Mr. MacLean, who has made extensive researches.

(42) Force's "Some Consideration of the Mound Builders," p. 65.

(43) Similar effigy mounds have been recently observed in Minnesota, but they have not yet been described. (Putnam.)

(44) Peet's *American Antiquarian,* May, 1884, p. 184.

(45) Peet's *American Antiquarian,* January, 1884. We are indebted to the writings of Mr. Peet in this periodical for the months of January, May, and July, 1884, for many interesting facts in reference to the effigy mounds. He has studied them more than any other person, and his conclusions are consequently of great value.

(46) Peet's "Emblematic Mounds and Totem System of the Indian Tribes."

(47) "Ancient Monuments," p. 40.

(48) *American Antiquarian,* January, 1883.

(49) Putnam, in "Proceedings of American Antiquarian Society," 1884.

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(50) Peet's "Emblematic Mounds and Totem System of the Indian Tribes."

(51) Abbott's "Primitive Industry," p. 383.

(52) Peet's "Military Architecture of the Emblematic Mound Builders."

(53) "Smithsonian Report," 1877, p. 278, *et seq.*

(54) "Ancient Monuments," p. 97; *American Antiquarian*, January, 1883, p. 77.

(55) This information is communicated by Mr. L. N. Tower, a gentleman in the employ of C. & N. W. E. R., at Tracy, Minn., who, at the request of the writer visited this locality, made measurements, etc.

(56) *American Antiquarian*, November, 1884, p. 403.

(57) The dimensions of this figure vary. Mr. MacLean's survey makes the entire length of the serpent part eleven hundred and sixteen feet; the distance between the extended jaws, one hundred feet. The oval figure is one hundred and thirteen feet long by fifty feet wide. The frog or head portion is fifty-five feet. Mr. Squier says, "The entire length, if extended, would be not less than one thousand feet." Mr. Putnam's measurements make it fourteen hundred and fifteen feet. The writer would state that he visited this effigy in the summer of 1884. Though there but a very short time, and not prepared to make careful

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measurements, he did notice some points in which the illustrations, previously given, are certainly wrong. The oval is not at the very extremity of the cliff. The little projections generally called ears of the serpent are not at right angles to the body, but incline backwards. The convolutions of the serpent's body bend back and forth quite across the surface of the ridge.

(58) Schmuckers.

(59) "Ancient Monuments," p. 47.

(60) Foster's "Prehistoric Races," p. 175.

(61) "Contributions North American Ethnology," Vol. IV, p. 210. A cut of this "restored" pueblo is there given.

(62) See discussion of this subject in "Proceedings of Am. Antiq. Society," Oct., 1883.

(63) "Peabody Museum Reports," Vol. II, p. 205.

(64) "Ancient Monuments," p. 47.

(65) Peet: "The Mound Builders."

(66) "Ancient Monuments," p. 53.

(67) Force: "Some Considerations on the Mound Builders," p. 64.

(68) "Archaeologia Americana," Vol. I, p. 129.

(69) For words at Newark, consult "Ancient Monuments," p. 67, *et seq. "American Antiquarian,"* July, 1882.

(70) "Ancient Monuments," p. 74.

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(71) "Ancient Monuments," p. 88.

(72) Mr. Putnam visited the work a few years since, and came to the conclusion that the larger and old openings were part of the original design, and that they were places where it was easier to put up log structures than earthen walls. Just such openings occur in the massive stone wall around Fort Hill, in Highland County. A few of the openings at Fort Ancient he thinks are unquestionably of recent origin, in order to drain the holes inside the embankments.

(73) *Cincinnati Quart. Journal Science,* 1874, p. 294.

(74) Peet: "The Mound Builders."

(75) Peet's "Mound Builders:" "If the reader will compare some of these last cuts with that of the fortified camp at Cissbury, Eng., p. 183, he will see how similar this last work is to those just mentioned. Perhaps the real lesson to be learned is that rude people, whether Indians, Mound Builders, or Celts, resorted to about the same method of defense."

(76) "Antiquarian Research," p. 89.

(77) Conant's "Footprints of Vanished Races," p. 15, *et seq.* Mr. Conant refers to Mr. Pidgeon's work in such a way as to give the impression that he was convinced of the genuineness of his account.

(78) "Traditions of Decodah," p. 89, *et seq.*

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(79) "Antiquarian Research," p. 190.

(80) "The American Indian, so far as known, without the exception of a single tribe, worshiped the sun." Carr's "Mounds of the Mississippi Valley," p. 56.

(81) Conant's "Footprints of Vanished Races," p. 60.

(82) Ibid., p. 32. If the explorers are really satisfied this was a walled town, it ought to throw some light on the inclosures in the Ohio Valley.

(83) Conant's "Footprints of Vanished Races," p. 35.

(84) Conant's "Footprints of Vanished Races," p. 77.

(85) Vol. III, p. 290, *et seq.*

(86) Morgan's "Ancient Society," p. 11.

(87) "Ancient Monuments," p. 210; also Peet: "The Mound Builders." "Their relics are marked by a peculiar finish."

(88) Rau's "Anthropological Research."

(89) "Proceedings Am. Antiq. Society," April, 1877, p. 61.

(90) "Smithsonian Contribution to Knowledge," Vol. XIII.

(91) Abbott's "Primitive Industry," p. 315.

(92) "Annual Report of Bureau of Ethnology," 1880-1, p. 123, *et seq.*

(93) In the "Annual Report of Bureau of Ethnology," for 1880-1, Mr. Henshaw has very fully discussed these mound-pipes, and shown that Messrs. Squier and Davis wore mistaken in a number of

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their identifications of the animal forms. He concludes there "are no representations of birds or animals not indigenous to the Mississippi Valley."

(94) The recent discoveries by Putnam and Metz, in the Altar-mounds in the Little Miami Valley, have brought to light many interesting and important sculptures in stone and terra-cotta, which, as works of art, are in some respects superior to those from the Scioto Valley, but as they have not yet been figured, we can only refer to them here in this brief note.

(95) "Number Eight," Mound City, near Chillicothe, Ohio. "Ancient Monuments," p. 152.

(96) Rau: "Anthropological Subjects," p. 130.

(97) Morgan's "Ancient Society," p. 12.

(98) *American Antiquarian,* 1879, p. 64.

(99) McAdams: *American Antiquarian,* 1880, p. 140.

(100) "Smithsonian Report," 1866. We have gathered these points for comparison from Dr. Rau's article in that report.

(101) Bella Hubbard, *American Antiquarian,* 1876, p. 219.

(102) Foster's "Prehistoric Races," p. 346.

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END OF CHAPTER X.**********

The Prehistoric World:

or, Vanished Races by E. A. Allen

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Chapter XI

THE PUEBLO COUNTRY.

Description of the Pueblo Country--Historical outline--

Description of Zuni--Definition of a Pueblo--Old Zuni--

Inscription Rock--Pueblo of Jemez--Historical notice of Pecos

--Description of the Moqui tribes--The Estufa--Description of the

San Juan country--Aztec Springs--In the Canyon of the McElmo--The

Ruins of the Rio Mancos--On Hovenweep Creek--Description of a

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Cliff-house--Cliff Town--Cave houses--Ruins on the San Juan--
Cave Town--The Significance of Cliff-houses--Moqui traditions--
Ruins in Northern New Mexico--Ruins in the Chaco Canyon--Pueblo
Bonito--Ruins in South-western Arizona--The Rio Verde Valley--
Casa Grande--Ruins on the Gila--Culture of the Pueblo Tribes--
Their Pottery--Superiority of the Ancient pottery--Conclusion.

We have hitherto been describing people and tribes that have completely vanished. We have peered into the mysterious past and sought as best we could to conjure back the scenes of many years ago. The line between the known and the unknown, between the historic and prehistoric, is not far removed from us in the new world. Not yet four centuries have passed since the veil was lifted, and America, with her savage tribes of the North, and her rude civilization of the South, was revealed to the wondering eyes of Europe. But with a knowledge of this new land came also wondrous stories of wealth, and in consequence an army of adventurers were soon on her shores. Then follows a short period of war and conquest. The Indian race could not withstand the whites. European civilization, transplanted to America, has thriven. But whatever advance the native tribes have made since the discovery, has been by reason of contact with the whites.

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Map of Pueblo Country.----------

There was no single birthplace of American culture. Advance took place wherever the climate was mild and the soil fertile, and thus an abundant supply of food could be obtained. One such locality was the valley of the San Juan, in what is now the southwestern part of the United States. It is quite allowable to suppose that here the mild climate and bountiful soil suggested agriculture, and with a knowledge of this, rude though it was, a beginning was made in a culture which subsequently excited the admiration of the Spaniards. However that may be, we know this section contains abundant ruins of former inhabitants. And yet again we find in this same country the remnants of this former people, doubtless living much the same sort of life as did their forefathers. American scholars, with the best of reason, think this section affords the best vantage ground from which to study the question of native American culture. It presents us not only with ruins of past greatness, but in the inhabited pueblos, gives us a picture of primitive times, and invites us, by a

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careful study of their institutions, to become acquainted with primitive society.

Travelers and explorers describe the scenery of the Pueblo country as a very peculiar one. It is bleak without being absolutely barren. The great mountain chains form picturesque profiles, which in a measure compensate for the lack of vegetation. No country on the face of the globe bears such testimony to the power of running water to wear away the surface. The rivers commenced by wearing down great canyons. They occur here on a grand scale. The canyon of the Colorado River, having a length of two hundred miles, and through the whole, nearly vertical walls of rock, three to six thousand feet in height. Nearly all the tributary streams of the Colorado empty into it by means of gorges nearly as profound. What is true of the Colorado is true, though in a lesser degree of the Rio Grande and of the Pecos, as only portions of these streams are canyon-born. But, besides digging out these canyons, the entire surface of the country has in places been removed to the depth of several hundred feet, leaving large extent of table-lands, called mesas, with generally steep, or even precipitous, sides, standing isolated here and there.

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Though thus bearing evidence of more extended rainfall, and of the action of water in the past, it is essentially an arid country now. Most of the minor water-courses laid down on the map are dry half of the year, or have but scattered pools of water; so a description of the surface of the country would tell us of deep river valleys, in many cases narrow and running through rocky beds, in which case we call them canyons; in other cases very wide, but having generally precipitous sides; the country often mountainous and great stretches of table-land, but generally dry and desolate, except in the immediate vicinity of rivers. The river valleys themselves are generally very fertile.

Such is the country where we are to investigate native American culture. The history of the country since its first occupation by the Spaniards is not devoid of interest. It did not take the Indians of Mexico long to learn that what the Spaniards most prized was gold, and that the surest way to curry favor with them was to relate to them exaggerated stories of wonderful wealth to be gained in distant provinces. About 1530 the viceroy of New Spain (Mexico) learned from an Indian slave of seven great cities somewhere to the north; and of their wealth it was said they had streets exclusively occupied by workers in gold

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and silver.

Though expeditions to the northern provinces of Mexico speedily dispelled the illusions in regard to them, the wonderful story of the Seven Cities flitted further north. Six years later these stories were invested with new life by the arrival in Mexico of Cabeza De Vaca and three companions. The story of their remarkable wanderings reads like an extract from a work of fiction. They were members of the unfortunate Spanish expeditions to the coast of Florida in 1528. After the shipwreck and final overthrow of the expedition, these four men had wandered from somewhere on the coast of the Gulf of Mexico, first north, and then west, passing through, probably, portions of Texas and New Mexico, until finally they were so fortunate as to meet with their own countrymen near Culiacan, in Mexico. The story they had to tell fell on willing ears. They stated to the viceroy that they had carefully observed the country through which they had passed, and had been told of great and powerful cities containing houses of four and five stories, with the usual accompaniments of great wealth.

The next incident was the journey of three Franciscan friars and a negro (who, by the way, had been with De Vaca in his

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wanderings), sent out by the Governor Coronado, with orders to return and report to him all they could learn by personal observation of the Seven Cities. This expedition did not accomplish much. Arriving near Cibola (the Spanish name for the country of the Seven Cities), they sent the negro on ahead to gain the good will of the Indians. Instead of this, he was killed by them. On hearing which, the monks contented themselves with gazing on the pueblo (which they describe as "more considerable than Mexico") from a safe distance, and then hurriedly returned to Culiacan. They gave Coronado a most glowing account of all they had discovered.

Coronado now thought the time had come for decisive action. Accordingly, with the viceroy's permission, he organized his forces, and in 1540 set out on his memorable march in search of the Seven Cities of Cibola. We do not propose to give in detail the series of conquests beginning with this expedition and finally ending with the subjection of New Mexico in 1598. It is needless to say that the Spanish forces found no cities teeming with wealth. What they did find was a country much the same as at present. The cities were the communal houses, or combination of houses, known as pueblos. The pueblo of Zuni is the remaining one of the mystical seven. The ruins of at least six other

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pueblos are known to be in the immediate vicinity.

This historical account, short and imperfect as it is, introduces us to a most interesting people. If we would know more of them we can not do better than to adopt the advice of Hosta, ex governor of Jemez, to Dr. Loew: "If you wish to see what a great people we once were you must go upon the mesas and into the canyons of the vicinity, where ruins of our forefathers are numerous."

One of the most important pueblos yet remaining inhabited, and one of the first that Coronado encountered in his expedition, is Zuni. The present pueblo is considered as the remaining one of the Seven Cities--at least, by the majority of Americanists. Whipple describes Zuni as follows: "Treading an opening between rocky bluffs, ... we entered the valley, several miles in width, which leads to Zuni. The soil seemed light, but where cultivated it produced fine crops without the aid of irrigation. ... Within the valley appeared occasional towers, where herders and, laborers watch to prevent a surprise from Apaches. Near the center of this apparent plain stood, upon an eminence, the compact city of Zuni. By its side flowed the river which bears the same name. It is now but a rivulet of humble

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dimensions, though sometimes said to be a large stream. ... Passing beneath an arch, we entered a court, ... entirely surrounded by houses of several receding stories, which were attained by means of ladders loading from one to another. ... From the top the pueblo reminds one of an immense ant-hill, from its similar form and dense population. ... Going down from its outer side into the street, we encounter five stories of descent."

In order to prevent confusion, we will state that a pueblo, which is the Spanish name for these old Indian towns, may be one of several different types. A common form of village consists of but one or two, seldom three, large buildings, so arranged as to surround an interior court. Sometimes there is but one large building, which is nearly in the shape of a half circle; instead of being really circular, it has a number of different sides. In some cases a village consists of a number of these large houses irregularly arranged. But the tendency is always to inclose a square.

In the modern villages the buildings forming the square do not meet, but in some cases are connected by bridges or covered gangways, and in some instances the houses project over the

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streets below, which, being narrow, are thus given an underground appearance.

Illustration of Ground Plan and End View.----------

The buildings, or communal houses, for one house contained sometimes five hundred rooms, are generally from three to four hundred feet long and about one hundred and fifty feet in width at the base. The lower story is divided by cross-walls into a mass of cell-like rooms, as shown in the illustrations which represents the ground plan of a pueblo having four ranges of rooms. Each story in height has one less range of rooms, so that, looking directly at the end of this building, it would present the appearance shown by this cut: The only means of getting from one terrace to the other is by the aid of ladders. In some cases these terraces run from both sides of the building; in others they face the inclosed space; and in others still they face outside. Most of the inhabited pueblos are built of adobe--that is, sun-dried bricks. The majority of the ancient ruins were built of stone set in adobe mortar. With this digression, we will now return to Zuni.

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Illustration of Old Zuni.----------

Ruins testifying to the former greatness of these people are scattered around them. Three miles to the east of the present pueblo of Zuni, on the bluff seen in the cut, are the ruins of a larger pueblo, which is called Old Zuni. Mr. Whipple, who explored this field of ruins, thus describes his visit:

"The projecting summit of the cliffs seemed inaccessible. ... We followed a trail which, with great labor, had been hammered out from seam to seam of the rocks along the side of the precipice. At various points of the ascent, where a projecting rock permitted, were barricades of stone walls, from which the old man told us they had hurled rocks upon the invading Spaniards. Having ascended one thousand feet, we found ourselves upon a level surface, covered with thick cedars. ... The top of the mesa was of an irregular figure, a mile in width, bounded upon all sides by perpendicular bluffs. ... The guide hurried us on half a mile further, where appeared the ruins of a city, indeed. Crumbling walls, from two to twelve feet in height, were crowded together in confused heaps, over several acres of

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ground. ... Upon examining the pueblo, we found the standing walls rested upon ruins of greater antiquity. The primitive masonry, as well as we could judge, must have been about six feet thick. The more recent was not more than a foot or a foot and a half, but the small sandstone blocks had been laid in mud mortar with considerable care."

The descriptions of ruins have so much that is similar that repetitions become tiresome. We will not, therefore, delay much longer with Zuni. A few miles east of Old Zuni we come to Pescado Springs, near which are the ruins of several pueblos. "This spring bursts from a broken point of the lava bed, and at once becomes a pretty stream, glittering with great numbers of the finny tribe, which gives name to it. The circular wall which once inclosed the fountainhead is now partly broken down. Upon each side, and almost tangent, are ruins of pueblos so ancient that the traditions of present races do not reach them. They are nearly circular in form, and of equal dimension. One measured three hundred and fifteen short paces, about eight hundred feet, in circumference. They were of stone; but the walls have crumbled, leaving only a heap of rubbish."

Following up this stream, other ruins were found. It seems,

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then, that in the pueblo of Zuni we have left a pitiful remnant of a numerous people. When the Spaniards first appeared on the scene they were apparently prosperous. The rapid decrease of the Pueblo tribes was owing to several causes. In 1680 they made an attempt to throw off the Spanish yoke. At first this was successful. But inter-tribal warfare at once set in. At this time also the inroads of the Apaches and Navajos became so troublesome that the Pueblo tribes could not successfully cultivate their land. At this time also a succession of dry years set in, and famine was the result. Their customs and manners we will describe in another place. There are many reasons for supposing that the country had been inhabited for a very long period, even before the Spaniards invaded it. Some places must have been even then in ruins, or, if inhabited, it is very strange that the Spanish records do not mention them. Such, for instance, is Inscription Rock, about fifteen miles east of Old Zuni, which the Spaniards must have passed when on their way back and forth to Zuni.

Illustration of Inscription Rock.----------

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The small mesa here ends with a bold front of white sandstone rock, rising almost vertically two hundred and fifty feet high. This cut gives us a view on the top of the table-rock. We see here the foundations of two old buildings. A deep ravine nearly divides this little plateau into two portions. As we have said, this rises with a bold, precipitous front from the plain. At one place this front is completely covered with inscriptions. Here the Indians, unknown years ago, made their strange hieroglyphics which, presenting to our eyes only a senseless combination of forms of animals and men and meaningless figures, may have conveyed to them knowledge of important events. A great many Spanish inscriptions have also been carved on the rock. Whipple calls attention to the fact that though Spanish inscriptions placed there nearly two hundred years ago, seem but slightly affected by atmospheric action, still some of the Indian hieroglyphics are "almost wiped out by the fingers of time." A number of centuries have probably rolled away since they were inscribed.

It may be interesting to know the reading of some of these old inscriptions. A translation of one of the earliest and longest is here given, with the exception of a few words which could not be made out: "Bartolome Narrso, Governor and Captain-general of

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the province of New Mexico, for our lord, the king, passed by this place on his return from the pueblo of Zuni, on the 29th of July, of the year 1620, and put them in peace, at their petition, asking the favor to become subjects of his majesty, and anew they gave obedience; all of which they did with free consent, knowing it prudent as well as very Christian, ... to so distinguished and gallant a soldier, indomitable and famed; we love ..."

It is somewhat strange to meet thus in the interior of the United States with the record of a military expedition some months before the Puritans landed at Plymouth. There seems to be nothing especial to describe about the ruins. Both Simpson and Whipple notice that the masonry seems to be unusually good. As it must have been very difficult to procure water, the location must have been chosen solely for the protection it afforded. The early Spanish accounts contain the names of one hundred and twenty-six pueblos. Some are, however, mentioned two or three times. Mr. Bandelier has succeeded in identifying every one. The Rio Puerco Valley was never a very prosperous one, and the river is scarcely a permanent one. At present a few ruins at Poblazon, for instance, are to be seen, and the valley looks poor and barren.

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The valley of the Rio Grande River was occupied by a number of Pueblo tribes, and there are at present eight inhabited pueblos along this river, in New Mexico, and one in Texas. The region around Bernalillo was a prosperous section. At intervals, up and down the river, and along its tributaries, we can still trace low crumbling ruins, evidence of an old pueblo. If the statements of the Spanish writers are to be believed, the number of inhabited towns, at the time of the conquest, was at least ten times that now existing. The population could never have exceeded forty thousand. At present it contains about nine thousand. Still making all allowance for Spanish exaggeration, we are convinced that it was a thickly populated country at the time of the conquest.

One of the most interesting pueblos in New Mexico is Jemez, on a river of that name, sixty miles west of Santa Fe. We speak of it here because it is the center of a most interesting group of ruins. Like the pueblo of Zuni, it is a remnant only of a prosperous people. The reports of Coronado's expedition frequently mention Jemez, though it may he doubtful whether they refer to the pueblo of that name now, or to one of the numerous ruined ones in the immediate vicinity. Jemez is a prosperous

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pueblo, having fine fields, large irrigating ditches, and extensive flocks of sheep.

Simpson describes it in 1849 as follows: "The pueblo of Jemez is an Indian town of between four and five hundred inhabitants, ... and is built upon two or three parallel streets, the houses being of adobe construction, and having second stories disposed retreatingly upon the first, to which access is had by means of ladders. ... About the premises are probably a dozen acres covered with apricot and peach trees. ... The Rio de Jemez, upon which the pave lies, is an affluent of the Rio Grande, varies from thirty to fifty feet in breadth, is of a rapid current. ... Patches of good corn and wheat skirt it here and there along its banks, and the extent of cultivable land bordering it may be estimated at about a mile in breadth."

We are more interested, however, in ruins testifying to past greatness. "Six miles up the river you come to the union of two canyons--the Guadalupe and San Diego. Where the mesa between these canyons narrows itself to a point, are the ruins of two pueblos, one upon the lower prominence of the mesa, the other upon the mesa proper, and only approachable by two narrow, steep trails, the mesa everywhere else being nearly perpendicular, and

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seven hundred and fifty feet high. The view from the mesa is picturesque and imposing in the extreme. Far beneath, to the right and left, a stream makes its way between the colossal walls of the sandstone upon the narrow width of the mesa; near frightful precipices are the ruins of a town of eighty houses, partly in parallel rows, partly in squares, and partly perched between overhanging rocks, the rim and surfaces of which formed the walls of rooms, the gaps and interstices being filled in artificially."

"Nearly every house had one story and two rooms. The building material was trachytic rock as found upon the mesa. Broken pottery, charred corn, and millstones for grinding corn, were found in some of the rooms. The roofs had all fallen in, and so also had many of the side walls, in the construction of which wood was but little used. Pinon trees have taken root within many of the former rooms. Upon asking my Indian guide whether the former inhabitants of this town were obliged to descend the steep and dangerous pathway every day to the creek to procure water, he replied there were cisterns upon the mesa, in which rain, formerly plentiful, was caught. He then called my attention to some conical heaps of stones along the rim of the precipice which was the material for defense."

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This description introduces us to another class of ruins--that is, detached separate houses, different from the great communal structures we have already described. What connection exists between these two forms of houses will be studied in another place. As a rule, the rooms in the detached houses are larger than in the communal houses. Exceptions occur in some of the inhabited pueblos. This is only one of many towns in ruins thereabouts. According to Dr. Loew there are no less than twenty-five or thirty.

It is not our purpose to describe any more of the pueblos of this section of New Mexico than is required to enable us to understand the customs, manners, and habits of the Pueblo tribes. We learn that in New Mexico we are brought face to face with feeble remnants of former tribes, and that these were probably in their most flourishing condition when the Spaniards first invaded the country, and though in a few instances the ruins imply a great antiquity, as at Inscription Rock, still we may be reasonably sure that the majority of them date but a few centuries back. The ruins of Catholic churches established by the Franciscan monks in the sixteenth century occur in several places, five being found around Jemez.

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The story of the decline of the Pueblo tribes may be illustrated by the history of Pecos. This pueblo was situated on the Rio Pecos, about twenty-five miles south-east of Santa Fe. With the exception of the present inhabited town of Taos, it was the most eastern point reached by the pueblo building tribes.
This, though a very large pueblo, has nothing especial to attract attention, except that the entire mesa was inclosed by a stone wall about six feet and a half high, and twenty inches thick, having a total length of three thousand, two hundred and twenty feet. Its history is, however, interesting and instructive. Coronado, with his army, visited Pecos before he abandoned the country in 1543. His reports mention it as a prosperous pueblo. Several raids were made into New Mexico by Spanish parties, but the conquest proper occurred in 1598, when the Pecos pledged fidelity to the crown of Spain.

The Catholic Church at once set about establishing missions at various pueblos. The Pecos Church was established in 1629, though missionary work had been done here before that time. One of the priests who accompanied Coronado remained behind at Pecos. He was never afterwards heard from. This church became one of the most renowned in New Mexico. The inhabitants became

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herders as well as agriculturists. It was prosperous. In 1680 the Pueblo of Pecos sheltered two thousand Indians. "But a storm was brewing from whose effects the Pueblo tribes never recovered." In 1680 the Indians rose against the Spanish and drove them from New Mexico. The priests were murdered, the churches were sacked. From this time doubtless date the ruins of the churches seen around Jemez. At Pecos and many other places intertribal warfare set in. Bloody battles were fought.

Neither were the Spaniards idle. In 1682 one expedition was made, and at least two pueblo towns were destroyed by them. In 1689 the entire country was reconquered. Some tribes were nearly exterminated, and all more or less weakened and a great many ruins date from that time. It was the beginning of a decline for the Pueblo tribes, and this decline was hastened by intertribal warfare, by drought, and by ravages from wild Indians. As to the drought, it is sufficient to state that some ruins are now fifteen, and even twenty, miles from permanent water. The Comanches were the scourge of the Pecos. On one occasion they slaughtered all the young men but one. This was a blow from which they never recovered. Finally reduced by sickness to but five adults, the Pecos sold their lands and, at the invitation of their brethren at Jemez, went to live with

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them, and the pueblo of Pecos speedily became the ruins we now find it.

No doubt a similar history could be written of many other ruins. "Our people," said Hosta, "were a warlike race, and had many fights, not only with the Spaniards, but also with other Indian tribes the Navajos and Taos, for instance and were thus reduced to this pueblo of Jemez, which now forms the last remnant." New Mexico is now becoming rapidly "Americanized," and it will soon be brought to a test whether the Pueblo tribes can withstand this new influence and retain their peculiar civilization, or whether, like many other races, their life force is nearly spent, in which case they will live only in history.

We must not overlook the Moki Pueblos in Arizona. They are situated one hundred miles northwest of Zuni. The Spaniards discovered them, and called their province Tusayan. They are much like the Pueblo tribes of New Mexico, only they have been much less disturbed by outside influence. There are a number of ruined towns in this vicinity. We wish to refer to them because of their intimate connection with the ruins to the North. Their houses are built of stone on precipitous mesas.

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Illustration of Wolpi. (Maj Powell)----------

Lieut. Ives, who visited them in 1858, has left quite a full description of them. He states that "each pueblo is built around a rectangular court, in which, we suppose, are the springs that furnished the supply to the reservoirs. The exterior walls, which are of stone, have no openings, and would have to be scaled or battered down before access could be gained to the interior. The successive stories are set back, one behind the other. The lower rooms are reached through trap-doors from the first landing. The houses are three rooms deep, and open upon the interior court." He was much pleased with the manner in which they had terraced off the bluff of the mesas into little garden patches, irrigating them from the large reservoirs from the top.

There is one feature common to all the Pueblo tribes which is necessary to refer to here, from its connection with the ruined structures further north. In all of the inhabited pueblos there is a structure known as an Estafa, some pueblos having several.

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They are usually circular, but occasionally (as at Jemez) rectangular. They are generally subterranean, or mostly so. They are great institutions among the Pueblos. "In these subterranean temples the old men met in secret council, or assembled in worship of their gods. Here are held dances, festivities, and social intercourse."

Another common feature, represented in this cut, is the watch-tower. It is either round, as in this case, or rectangular. It may be interesting to recall in this connection the signal mounds of the Mound Builders. They were not always in the immediate vicinity of other ruins. Neither can we state that there was a system in their arrangement, one answering to another at a distance, and yet it was noticed where the rains were numerous that several were in view from one point. In dimensions these towers range from ten to fifteen feet in diameter, and from five to fifteen feet in height, while the walls are from one to two feet thick. They are in many cases connected with structures rectangular in form.

Illustration of Watch Tower.----------

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We will now leave the inhabited pueblos and the ruins in their immediate vicinity and, going to the north, explore a section of country that shows every evidence of having sustained a considerable population some time in the past. To understand this fact clearly, it will be necessary to fix the location of the places named by means of the map. From time to time confused reports of the wonders to be seen in the San Juan section of Colorado had appeared in the East, but the first clear and satisfactory account is contained in the reports of Messrs. Jackson and Holmes, members of the U.S. Geographical and Geological survey of the territories under Dr. Hayden for 1874 and 1876.

In the south-western portion of Colorado is a range of mountains known as the San Juan. Stretching from their base west to the Sierras is a great plateau region, drained by the numerous tributaries of the San Juan River. It would, perhaps, be more in keeping with the facts of the case to say "had been drained some time in the past," for this is now such an arid, semi-desert country that the majority of the streams are dry, or have but scattered pools of water in them, during a large portion of the year; and yet, at times, great volumes of water go sweeping

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through them. This whole plateau is cut up with long, canyoned valleys, presenting, in effect, the same surface features that we have already described in New Mexico. Yet this precipitous, canyon-marked section of country is literally filled with the crumbling ruins of a former people. The situation in which they occur is in many cases very singular, and the whole subject is invested with great interest to us, because we see in them the remains of a people evidently the same as the Pueblo people to-day.

One of the most extensive ruins in this section is situated at Aztec Springs. This, it will be seen, is about midway between the Rio Mancos and the McElmo. Mr. Holmes found the site of the spring, but it contained no water. He was told, however, by those familiar with the locality that there had been a living spring there up to within a few years. It was evidently a place of considerable importance once. Mr. Holmes describes the ruins as forming the most imposing pile of masonry found in Colorado. They cover an area of over ten acres. This includes only the ruins around the springs. But all about this central portion are scattered and grouped the remnants of smaller structures. So that nearly a square mile is covered with the ruins of this ancient pueblo. Most of the stone used was brought from the Mesa

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Verde (Green Plateau), a mile away, and must have been a great work for a people so totally without facilities.

Illustration of Ruins at Aztec Springs.----------

It will be seen that immediately to the right of the Springs is a large rectangular ruin in better preservation than the rest. This now "forms a great mound of crumbling rock from twelve to twenty feet in height, overgrown with artemisia, but showing clearly, however, its rectangular structure, adjusted approximately to the four points of the compass." This house, from its massive walls, must have had an original height of at least forty feet. "The walls seem to have been doubled, with a space of seven feet between; a number of cross-walls at regular intervals indicate that this space has been divided into apartments, as seen in the plan." Two low lines of rubbish cross the square, probably partition walls.

Surrounding this house is a net-work of fallen walls, so completely reduced that none of the stones seem to remain in place. Mr. Holmes was at a loss to know whether to call them a

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cluster of irregular apartments, having low, loosely built walls, or whether they are the remains of imposing pueblos. In the group of ruins to the left of the spring are two well-defined circular estufas. Below the main mass of ruins, connected by low walls of ruins, is another great square, nearly two hundred feet in dimensions. One wall seems to have consisted of a row of apartments; the other walls served to simply inclose the square, near the center of which was another large estufa.

Several important conclusions can be drawn from a study of this locality. The spring, now dry, was once evidently the source of a considerable stream. Whether the group of low ruins were collections of small houses, or remains of imposing pueblos, we need not doubt that the walls of the square inclosures were composed of pueblo houses. The estufas were probably in all respects similar to those of the present inhabited pueblos. The country around, now so dry and barren, must once have supported considerable population. As to the period of abandonment, we have nothing to guide us. Being an agricultural settlement, it was probably abandoned at an earlier date than the cave-dwellings and cliff-houses of the canyons of the vicinity. The reason for this will appear subsequently. The site of this ruin, as well as for a long distance around, is covered

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with pieces of broken pottery. We notice that the spring has only lately gone dry. This illustrates the changes now taking place all through the country. It is drying up, and this process has been in operation for a long while.

Illustration of Ruins in the McElmo Canyon.-------

Many groups of ruins are now in localities where the people could not hope for subsistence. About six miles to the north of these ruins, about a mile from the McElmo, is the group of ruins here represented, which may throw some light on the remains at Aztec Springs. The principal feature is the triple walled tower, of which a plan is given. The tower has a diameter of about forty-three feet, and a circumference of about one hundred and thirty-five feet. The walls are traceable nearly all the way around, and the space between the two outer ones, which is about five feet, contains fourteen apartments or cells. The walls about one of these cells were still standing at the time of Mr. Holmes's visit, but the cell was filled with rubbish from the fallen walls. A door-way, opening into this apartment, could still be seen. The inner wall was probably never very high.

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It simply inclosed the estufa.

The ruins surrounding this tower consist of low, fallen walls, scarcely traceable. The apartments number nearly one hundred, and were generally rectangular. They are not of a uniform size, and were certainly not arranged in regular order. Now, as Mr. Holmes observes, it would certainly seem that, if they are the ruins of such structures as the pueblos of the south, there would be some regularity of size, and some systematic arrangement. He says that, in reality, they are more like a cluster of pens, such as are used by the Moqui tribes for keeping sheep and goats.

Since these surveys were made, Mr. Bandelier, as agent for the Archaeological Institute, has made important researches. He finds that the small, detached houses, such as we described in the ruined village near Jemez, are found in Arizona, with a small court-yard or inclosure attached to them. If we understand the description of the ruins just mentioned, and those at Apache Springs, they are villages of these small houses and their inclosures. In such villages the inclosures meet each other, so as to form a checker-board of irregularly alternating houses and courts. The houses are easily discernible from the fact of

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little rubbish mounds having accumulated where they stood.
Around these parts of the wall can still be traced.
This combination makes a strong, easily defended position.
Each of such villages contains one or more open spaces of large size, but they are irregularly located.

We must notice one point more: Each village of this nature, that was of any size, contained a larger ruin in the center. This was noticed in the ruins at Aztec Springs. This larger building was in the nature of a citadel, and there the inhabitants could retire when the approaches were carried by the enemy.
This central building ultimately swallowed up all the others, and so developed into the pueblo structures we have noticed.
The little walled inclosures surrounding the houses were largely in the nature of defenses. Tradition asserts that in many cases they were garden plats, and appearances sometimes confirm this.
"They may also have been the yard proper for each family, in which the latter slept, cooked--in fact, lived--during the heat of the Summer months."

Referring once more to the ruins near the McElmo, we are told that every isolated rock and bit of mesa within a circle of miles of this place is strewn with remnants of ancient

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dwellings. We presume these were small, separate houses. They may have been outlying settlements of the tribe whose main village was at Aztec Springs. We must also notice the small tower in the corner. This was a watch tower. It was fifteen feet in diameter, walls three and a half feet thick, and in 1876 was still five feet high, It overlooked the surrounding country. The rainfall in the past must have been more abundant, to support the population we are justified in thinking once lived there. The nearest water is now a mile away, and during the dry season some fifteen miles to the north, in the Rio Dolores, and yet we have every reason to believe these old inhabitants were very saving of water. They built cisterns and reservoirs to store it up against the time of need.

Illustration of Tower on the Rio Mancos.----------

We give a cut of the tower of the ruins of a similar village, or settlement, to the one just described, which occurs twenty miles to the southeast in the canyon of the Rio Mancos. Being so similar, we will mention it here. In this case the tower had only two walls. Mr. Holmes says the diameter of the outer wall

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is forty-three feet, that of the inner twenty-five feet. The space between the two circles is divided by cross-walls into ten apartments. This tower is placed also in the midst of a group of more dimly marked ruins or foundations, extending some distance in each direction from it. Mr. Holmes, however, states that there are no ruins of importance in connection with this tower, but that there are a number of ruins in the immediate vicinity. In this case, then, the citadel (if such it was) was not directly connected with other ruins.

The Rio Mancos, that we have just mentioned, was a favorite place of resort for these old people. This stream, rising in the La Platte Mountains, flows through beautiful valleys to a great table-land known as the Mesa Verde. Mr. Jackson explored this valley in 1874, and he reports as follows: "Commencing our observation in the park-like valley of the Mancos, between the mesa and the mountains, we find that the low benches which border the stream upon either side bear faint vestiges of having at some far away time been covered with dwellings, grouped in communities apparently, but so indistinct as to present to the eye little more than unintelligible mounds. By a little careful investigation, however, the foundation of great square blocks of single buildings and of circular inclosures can be made out, the

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latter generally of a depressed center, showing an excavation for some purpose."

From this description we can not quite make out whether these ruins are great communal buildings, like the modern pueblo, or clusters of separate houses. We incline to the latter opinion, however. The circular depressed area was doubtless used as an Estufa, the place of religious meetings for men alone.
"The greater portion of these mounds are now overgrown with artemisia, pinion-pine, and cedar, concealing them almost entirely from casual observation." "We found the surest indication of their proximity in the great quantity of broken pottery which covered the ground in their neighborhood. The same curiously indented, painted, and glazed ware, was found throughout New Mexico and Arizona. It was all broken into very small pieces, none that we could find being larger than a silver dollar." Specimens of this pottery will be figured in its appropriate place.

"Nowhere among these open plane habitations could we discover any vestige of stone-work, either in building material or implements. It is very evident that the houses were all of adobe, the mound-like character of the remains justifying that

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belief." In this last respect we note a difference between these remains and those already described. The mesa verde is one of those elevated plateaus we have so often described. Through this the Mancos has cut a canyon nearly thirty miles in length, and from one to two thousand feet deep. The description we have already given is of the valley of the river before coming to the canyon.

Entering the canyon, Mr. Jackson continues: "Grouped along in clusters, and singly, were indications of former habitations, very nearly obliterated, and consisting mostly, in the first four or five miles, of the same mound-like forms noticed above, and accompanied always by the scattered, broken pottery. Among them we find one building of squared and carefully laid sandstone, one face only exposed of three or four courses, above the mass of *debris* which covered every thing.
This building lay within a few yards of the banks of the stream, was apparently about ten feet by eight, the usual size, as near as we could determine, of nearly all the separate rooms or houses in the larger blocks, none larger, and many not more than five feet square. The stones exposed are each about seven by twelve inches square, and four inches thick, those in their original position retaining correct angles, but, when thrown

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down, worn away by attrition to shapeless bowlders."

"As we progressed down the canyon the same general characteristics held good. The great majority of the ruins consisting of heaps of *debris* a central mass considerably higher and more massive than the surrounding lines of sub-divided squares. Small buildings, not more than eight feet square, were often found standing alone apparently, no trace of any other being detected in their immediate neighborhood." We would call especial attention in this description to the character of the ruins, the central, higher mass surrounded by other ruins; also to the houses found occasionally standing alone. We notice they are of the same general character as the ruins at Aztec Springs.

We are finding abundant evidence that this section was once thickly settled. Going back to the triple-walled tower on the McElmo, Mr. Jackson says of the immediate vicinity: "On the mesa is group after group upon the same general plan, a great central tower and smaller surrounding buildings. They cover the whole breadth and length of the land, and, turn which way we would, we stumbled over the old mound and into the cellars, as we might call them, of these truly aborigines." We believe,

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however, that no excavation for cellar purposes are found in the entire region covered by these ancient ruins.

"Starting down the canyon (the McElmo), which gradually deepened as the table-land rose above us, we found upon either hand very old and faint vestiges of the homes of a forgotten people, but could give them no more attention than merely noting their existence."

Mr. Morgan has shown the existence of regular large houses in the valley of Aminas River, east of the Mancos; and he also speaks of the ruins at the commencement of McElmo Canyon as being large communal buildings. We should judge from Mr. Jackson's report just given that these ruins were rather small clusters of houses of the same design as the ruins at Apache Springs.

Near the Utah boundary line we notice the Hovenweep Creek joining the McElmo from the north. The mesa, narrowing to a point where the two canyons meet, is covered with ruins much like what we have described already. The Hovenweep is appropriately named, meaning "deserted valley."

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Illustration of Ruins in the Hovenweep Canyon.--------

Further west still is the Montezuma Valley. Mr. Jackson's party found the ruins so numerous as to excite surprise at the numbers this narrow valley must have supported. He says, "We camped at the intersection of a large canyon coming in from the west. ... At this point the bottoms widen out to from two to three hundred yards in width, and are literally covered with ruins, evidently those of an extensive settlement or community, although at the present time water was so scarce (there not being a drop within a radius of six miles) that we were compelled to make a dry camp. The ruins consist evidently of great solid mounds of rock *debris*, piled up in rectangular masses, covered with earth and a brush growth, bearing every indication of extreme age--just how old is about as impossible to tell as to say how old the rocks of this canyon are. This group is a mile in length, in the middle of the valley space, and upon both sides of the wash. Each separate building would cover a space, generally, of one hundred feet square; they are seldom subdivided into more than two or four apartments. Relics were abundant, broken pottery and arrow-points being especially plenty. At one place, where the wash held partially

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undermined the foundation of ore of the large buildings, it exposed a wall of regularly laid masonry, extending down six feet beneath the superincumbent rubbish to the old floor-level, covered with ashes and the remains of half-charred sticks of juniper."

Lower down, the valley was noted for little projecting tongues of rock extending out into the canyon, sometimes connected with the main walls of the canyon by narrow ledges of rock, and in cases even this had disappeared, leaving detached masses of rock standing quite alone. "Within a distance of fifteen miles there are some sixteen or eighteen of these promontories and isolated mesas of different height, every one of them covered with ruins of old and massive stone-built structures."

We have been somewhat full in our description of these ruins, yet their importance justifies this course. So far we see but very little to remind us of the pueblo towns. On the other hand, the buildings seem to be often single houses, or a few houses grouped together. In some locations they were built of stone, in others of adobe. It is to be observed, however, that the houses are very small--not larger than the rooms in the modern pueblos. We evidently have here quiet scenes of agricultural life.

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They of course had enemies, and guarded against their attacks by the watch-towers, of which an example is given in the McElmo ruins. The country must have been better watered than now, the soil productive the seasons kind; and who can tell how long these agricultural tribes held the land? Under these conditions, time must have been rapidly bringing them civilization. But we must now turn to a sorrowful chapter in their history, and trace the dispersion of these tribes, their unavailing attempts to hold their own against a savage foe, and the desperate chances they took before leaving the land of their fathers.

This brings us to a consideration of cliff-houses--that is, houses so placed that manifestly the only reason the people would have for putting them where found would be of a defensive nature; and, for a similar reason, we may be very sure they are of a later date than the majority of the ruins in the valley or in the canyons. People would never have settled in the valley in the first place if they had felt the necessity of seeking inaccessible places in which to build shelters as a resort in time of need. We can not do better than to refer once more to Mr. Jackson's exploration in the valley of the Rio Mancos. We have already referred to it in reference to the larger ruins.

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Illustration of Two-storied House in the Mancos Canyon.----

This cut gives us a general view of the first cliff-house discovered in this valley. This was far up on the cliff. Mr. Jackson says, "We had no field-glass with the party, and to this fact is probably due the reason we had not seen others during the day in this same line, for there is no doubt that ruins exist throughout the entire length of the canyon, far above and out of the way of ordinary observation." Subsequently Mr. Holmes proved this supposition to be true. The sides of this canyon have nearly all their ledges occupied by these houses.

Every advantage was taken, both natural and artificial, to conceal them from view. "Cedars and pines grew thickly along the ledges upon which they are built, hiding completely any thing behind them. All that we did find were built of the same materials as the cliffs themselves with but few, and then only the smallest, appertures toward the canyon, the surface being dressed very smooth, and showing no lines of masonry. It was only on the very closest inspection that the houses could be separated from the cliff."

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Illustration of View of Cliff in which the House is Situated.--

To illustrate the singular position in which this house was located, we introduce this cut. It is seven hundred feet above the valley. "Whether viewed from below or from the heights above, the effect is almost startling, and one can not but feel that no ordinary circumstances could have driven a people to such places of resort." As showing the difficulty an enemy would have to approach such a house, we give Mr. Jackson's account of his climb to it:

"The first five hundred feet of ascent were over a long, steep slope of *debris,* overgrown with cedar, then came alternately perpendiculars and slopes. Immediately below the house was a nearly perpendicular ascent of one hundred feet, that puzzled us for a while, and which we were only able to surmount by finding cracks and crevices into which fingers and toes could be inserted. From the little ledges occasionally found, and by stepping upon each other's shoulders, and grasping tufts of yucca, one would draw himself up to another shelf, and

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then, by letting down a stick of cedar or a hand, would assist the others."

"Soon we reached a slope, smooth and steep, in which there had been cut a series of steps, now weathered away into a series of undulating hummocks, by which it was easy to ascend, and without them almost an impossibility. Another short, steep slope, and we were under the ledge on which stood our house." By referring to the first cut, we see that the house stands on a very narrow ledge, and that the rocks overhang it so as to furnish a roof. It will also be noticed that the ledge is rounding, so that the outer walls of the house rise from an incline. Piers, or abutments, had also been built along the ledge, so as to form an esplanade.

Illustration of Plan of the House.----------

The house itself was only about twelve feet high, but this had been divided into two stories. Whether it ever had any other roof than the overhanging walls of rock is doubtful. The plan is shown in the preceding cut. The curved apartment at the right is

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a reservoir, capable of holding about five barrels. A series of pegs were inserted in the wall, so as to form a means of descent from a window to the bottom. A number of doorways are seen in the plan; a cut of one is presented in this figure.

Illustration of Doorway of the House.----------

We are, however, warned that the artist has represented the stonework a little too regularly. The support for the top of the doorway is not clearly shown; a number of small beams of wood were laid across, on these the stones. This cut gives us a view of the front room. Looking in from the end window, we can see where the second story commenced. The doorway we have been describing was not a very handy mode of entrance. Its builders, however, did the best they could in their limited space.

The house displays perseverance, ingenuity, and taste. It was plastered, both within and without, so as to resemble the walls of the canyon, but an ornamental border was added to the plastering of the interior rooms.

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Illustration of Room of the House.--------

This cliff house could only have been used as a place of refuge in a time of need. We must observe the care with which it was hidden away. The walls were plastered on the outside, so as to resemble the canyon-walls. Then we must notice what a secure place of retreat it afforded the people. No invading party could hope to storm this castle as long as there was any one to defend it. This house, with its four small rooms, could give shelter to quite a band of Indians. Then, besides, it was not alone. Ruins of half a dozen smaller houses were found near by. Some had been crushed by the overhanging walls falling upon them, and others had lost their foothold and tumbled down the precipice.

It needs but a glance to satisfy any one that only dire necessity would have driven a people to such resorts. When we consider how much labor it must have required to convey the materials to the almost inaccessible place, the many inconveniences the people must have been put to when they were occupied, we may imagine how the people clung to their old home. It is altogether likely that such resorts would be only used now

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and then. During seasons of war and invasion probably the women and old the men, with the little ones, went thither for protection.

Mr. Holmes calls attention to one point bearing on the antiquity of this ruin. The buttresses, which probably support a balustrade, noticed in the figure on the house, were built on the sloping surface of the rock. It would take but very little weathering of the rocks to throw them to the bottom of the canyon; and, furthermore, the rock is a rough sandstone, and hence easily crumbles; and it is not well protected by the overhanging cliff; but no perceptible change has taken place since the buttresses were first built. The thickness of a sheet of paper has hardly been washed from the surface, and the mortar, almost as hard as the rock itself, lies upon it as if placed there within a dozen years. This structure is, evidently, not as old as the low mounds of crumbling ruins we have heretofore described. It is more than probable that such retreats as this were not provided until near the close of their stay in the country.

A ruin further down the canyon, described by Mr. Holmes, is of great interest, as it shows how necessary the people considered

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it to be to construct an estufa. It will be observed that there are two houses. So nicely are these hidden away that Mr. Holmes had almost completed a sketch of the upper house before he noticed the lower one. They are both overhung by the rocks above so as to be protected from the weather. The upper house can only he approached by means of steps cut in the rock. It appears to be in an unfinished state, and, when we consider the great labor required for its construction, we can not wonder that they grew tired before its completion.

The lower house is some eight hundred feet above the bottom of the canyon, but is comparatively easy of approach.
The interesting feature about it is the estufa. It was situated near the center of the main portion of the house. The entrance to this chamber shows the peculiar importance attached to it by the builders. Mr. Holmes says: "A walled and covered passage-way of solid masonry, ten feet of which is still intact, leads from an outer chamber through the small intervening apartments into the circular one. It is possible that this originally extended to the outer wall, and was entered from the outside. If so, the person desiring to visit the estufa would have to enter the aperture about twenty-two inches high by thirty wide, and crawl, in the the most abject manner possible, through a tube-like

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passage-way nearly twenty feet in length."

"My first impression was that this peculiarly constructed way was a precaution against enemies, and that it was probably the only means of entrance to the interior of the house, but I am now inclined to think this is hardly probable, and conclude that this was rather designed to render a sacred chamber as free as possible from profane intrusion." This illustrates the peculiar regard in which it was held. Even when sore pressed by their enemies, and obliged to flee to inaccessible heights, they still constructed their sacred place.

Illustration of Cliff-town, Rio Mancos.----------

These cliff-houses, of which we give illustrations, are quite common in the Mancos. Our frontispiece shows an interesting group, about ten miles from the foot of the canyon. These are situated only about forty feet above the bed of the creek, but still in a secure position. Here a bed of shale had been weathered out of the sandstone, leaving a sort of horizontal groove four feet high and from four to six feet deep. In this a

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row of minute houses had been built. They had been made to occupy the full height and depth of the crevice, so that when one reaches it at the only accessible point he is between two houses, and must pass through these to get at the others.

Besides the cliff-houses, the explorers found that these people had made use of little cave-like openings in the cliffs, and, by walling up the openings, had converted them into houses. These were very common in the Mancos, and of all sizes. Some were evidently merely little hiding places, in which to store away provisions or other articles. In some places the cliffs were literally honey-combed with these little habitations. Sometimes the walls were quite well preserved and new-looking, while all about were others in all stages of decay.

"In one place in particular a picturesque outstanding promontory has been full of dwellings. ... As one from below views the ragged, window-pierced crags, he is unconsciously led to wonder if they are not the ruins of some ancient castle, behind whose mouldering walls are hidden the dread secrets of a long-forgotten people; but a nearer approach quickly dispels such fancies, for the windows prove to be only the doorways to shallow and irregular apartments hardly sufficiently commodious

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for a race of pigmies. Neither the outer openings nor the apertures that communicate between the caves are large enough to allow a person of large stature to pass, and one is led to suspect that these nests were not the dwellings proper of these people, but occasional resorts for women and children, and that the somewhat extensive ruins of the valley below were their ordinary dwelling places."

Illustration of Caves used as Houses, Rio Mancos.-------

On the San Juan, about ten miles above the mouth of the Mancos, is a significant combination of cave-dwellings and towers. In this case, about half-way up the cliff, which is not more than forty feet high, excavations had been made in a soft bed of shale. They are now quite shallow, but were probably once deeper and walled up in front. Directly above these cave-openings, on the very brink of the cliffs, were the remains of two circular towers, in each case double-walled, and probably divided by cross-walls into partitions. The towers were probably their council chambers and places of worship. The caves, directly below, down a steep bank, were their fortresses, whither in

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times of danger they could flee. The little community, by means of ladders, could freely pass from their cave resorts to the towers and back.

Illustration of Ruins in the San Joan Canyon.----------

The San Juan River does not seem to be as rich in ruins as some of its tributaries. Yet near the mouth of the Montezuma we came upon a ruin which shows considerable analogy to the pueblos. Mr. Jackson says upon the top of the bench (fifty feet high) overlooking the river are the ruins of a quadrangular structure of a peculiar design. It is arranged very nearly at right angles to the river. We see from the plan that we have the ruins of a larger building arranged around an open court--at least, Mr. Jackson could detect no trace of a wall in front. We must notice the seven apartments, arranged in the form of a semicircle, back of the court. Extreme massiveness is indicated throughout the whole structure.

In the immediate vicinity of this ruin were found a number of little, cave-like dwellings. They were so small that doubts were

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raised as to whether they were suitable for human habitations, but the majority of them bore ample evidence in smoke-begrimed walls that such was their use. Twelve miles below the mouth of the Montezuma this group of ruins was discovered. These were situated in a cave that was almost exactly a hemisphere in shape. Where the curve of the roof met the curve from the bottom a little projecting bench had been utilized as a foundation for a row of houses.

Illustration of Cave-Town.----------

The little community that built their houses here seem to have practised all the industries of a savage life. In one place there was evidence that on that spot had been carried on the manufacture of stone implements. At another place holes had been drilled, as if for a loom. In the main building there were fourteen rooms or apartments, ranging from sixteen to nine feet in width. "In the central room of the main building we found a circular, basin-like depression, that had served as a fireplace, being still filled with the ashes and cinders of aboriginal fires, the surrounding walls being blackened with smoke and

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soot. This room was undoubtedly the kitchen of the house. Some of the smaller rooms appear to have been used for the same purpose, the fires having been made in the corner against the back wall, the smoke escaping overhead. The masonry displayed in the construction of the walls is very creditable. A symmetrical curve is preserved throughout the whole line, and every portion perfectly plumb. The subdivisions are at right angles to the front. The whole appearance of the place and its surroundings indicate that the family or little community who inhabited it were in good circumstances, and the lords of the surrounding country. Looking out from one of their houses, with a great dome of solid rock overhead that echoed and re-echoed every word uttered with marvelous distinctness, and below them a steep descent of one hundred feet to the broad, fertile valley of the Rio San Juan, covered with waving fields of maize and scattered groves of majestic cotton-woods, these old people, whom even the imagination can hardly clothe with reality, must have felt a sense of security that even the incursions of their barbarian foes could hardly have disturbed."

To describe the defensive ruins on Epsom Creek, Montezuma Creek, and the McElmo is simply to repeat descriptions already given. We meet with cave-houses, cliff-houses, and sentinel-towers in

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abundance. The whole section appears to have been thickly settled. Further explorations will doubtless make known many more ruins, but probably nothing differing in kind from what is already known. We think the defensive ruins belong to a later period of their existence than do the old and time-worn structures we have hitherto described along the river valleys and open plains, as at Aztec Springs. These structures plainly show that at the time they were built the people were subject to an invasion from a stronger foe, one before whose approach they had to fly for protection to the almost inaccessible cliffs.

They would obviously never have settled there had they always had to contend with these savage tribes. It needs no great skill to read the story of the dispersion of these old people from the ruins we have described; the many watch-towers, which were also used as fortresses or citadels in which to find protection, testifying to the need of increased watchfulness. The cave-houses and cliff-fortresses, cunningly hidden away to escape detection, or so placed as to defy the assault of their enemies, show to what desperate straits they were driven; and imagination only can picture the despair that must have filled their hearts when the hour of final defeat came, and they must have realized that even these shifts would not allow them to stay in the lands

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of their fathers.

That this is the explanation of these ruins, we will cite the legendary stories given by an old man among the Moquis concerning some ruins in the canyon of the McElmo, just over the line in Utah. At this point the canyon widens out considerably, and in the center of the valley is still standing a portion of the old mesa, once filling the entire valley. It is now a mass of dark red sandstone, about one hundred feet high, and three hundred feet around, seamed and cracked, and gradually disappearing, as the rock has gone all around it. The top of this rock is covered with the ruins of some building; there are also ruins at the base and all around the immediate vicinity. There were watch towers and estufas, showing that this was a place of great interest.

Illustration of Battle Rock, McElmo Canyon.----------

The story is as follows: "Formerly the aborigines inhabited all this country as far east as the headwaters of the San Juan, as

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far north as the Rio Dolores, west some distance into Utah, and south and south-west throughout Arizona, and on down into Mexico. They had lived there from time immemorial, since the earth was a small island, which augmented as its inhabitants multiplied. They cultivated the valley, fashioned whatever utensils and tools they needed very neatly and handsomely out of clay, and wood, and stone, not knowing any of the useful metals; built their homes and kept their flocks and herds in the fertile river bottoms, and worshiped the sun. They were an eminently peaceful and prosperous people, living by agriculture rather than by the chase. About a thousand years ago, however, they were visited by savage strangers from the north, whom they treated hospitably. Soon these visits became more frequent and annoying. Then their troublesome neighbors, ancestors of the present Utes, began to forage upon them, and at last to massacre them and devastate their farms. So, to save their lives at least, they built houses high up on the cliffs, where they could store food and hide away until the raiders left.

"But one Summer the invaders did not go back to their mountains, as the people expected, but brought their families with them and settled down. So, driven from their homes and lands, starving in their little niches on the high cites they could only steal away

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during the night and wander across the cheerless uplands. To one who has traveled these steppes such a flight seems terrible, and the mind hesitates to picture the sufferings of the sad fugitives. At the 'Creston' (name of the ruin) they halted, and probably found friends, for the rocks and caves are full of the nests of these human wrens and swallows. Here they collected, erected stone fortifications and watch-towers, dug reservoirs in the rocks to hold a supply of water, which in all cases is precarious in this latitude, and once more stood at bay. Their foes came, and for one long month fought, and were beaten back, and returned day after day to the attack as merciless and inevitable as the tide. Meanwhile the families of the defenders were evacuating and moving south, and bravely did their defenders shield them till they were all safely a hundred miles away.

"The besiegers were beaten back and went away. But the narrative tells us that the hollows of the rocks were filled to the brim with the mingled blood of conquerors and, conquered, and red veins of it ran down the canyon. It was such a victory as they could not afford to gain again, and they were glad, when the long flight was over, to follow their wives and little ones to the south. There, in the deserts of Arizona, on well-nigh

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unapproachable, isolated bluffs, they built new towns, and their few descendants, the Moquis, live in them to this day, preserving more carefully and purely the history and veneration of their forefathers than their skill or wisdom."

Mr. Jackson thinks this legend arises from the appearance of the rocks. The bare floor of nearly white sandstone, upon which the butte stands, is stained in gory streaks and blotches by the action of an iron constituent in the rocks of another portion of the adjoining bluffs. That may well be true, but we believe that there are germs of truth in the story. Driven from their homes, where did the fugitives go? Some of them may have gone east, but probably the body of the migration was to the south. It has been the tendency of all tribes, but especially of the sedentary tribes, to pass to the south and east, and this is also the traditions among the inhabitants of still existing pueblos.

We find that every available portion of New Mexico and Arizona bears evidence of having been once populated by tribes of Indians, who built houses in all respects like those already described. In northern New Mexico, Prof. Cope has described a whole section of country as being at one time more densely populated than the thickly inhabited portions of the Eastern States. He says: "The number of buildings in a square mile of

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that region is equal to, if not greater than the number now existing in the more densely populated rural districts of Pennsylvania and New Jersey."

In one location he found a village of thirty houses, built of stone, and all in ruins. He found, over a large extent of country, that every little conical hill and eminence was crowned with ruins of old houses. We, of course, can not say that these ruins are necessarily younger than those to the north of the San Juan, and yet we think from Prof. Cope's description that they do not present such evidence of antiquity as do the crumbling ruins previously described. And then, besides, they were always located in easily defended positions.

The village spoken of was really a Cliff Village, being arranged along the very edge of a precipitous mesa, the only access to it being along a narrow causeway. Then again, although we have described many ruins near which no water is to be had, at least, in dry seasons, yet we have every reason to suppose water was formerly more plentiful and easily attained. But in this section it must always have been a serious question with them to obtain enough water for necessary purposes. They must have had to store away water in vessels of pottery, whose ruins are now so

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abundant. It is not such a country as we would suppose a people to choose for a place to settle in, only that they knew not where else to go.

It is also considered settled that all the inhabited pueblos, as well as those in ruins near the inhabited ones, were built by the descendants of these people whose houses we have described. This is proven by the similarity of pottery. Though some styles of ancient corrugated ware are found in the San Juan section not found near the inhabited pueblos, yet vast quantities of ware, similar to that now found in the inhabited pueblos, can be picked up all over the ruins to the north. Again, their religion must have been the same, as ruined estufas are common, in all respects similar to those now in use. In the modern pueblos we are struck with the small cell-like rooms, yet they are but little smaller than the ordinary single houses plentifully found over the entire field of ruins. All the Pueblo tribes are agricultural, so were these old people. In fact, all evidence confirms the conclusion that the remnants of the Pueblo people that we have already described, are also the descendants of the people driven by hostile bands from north of the San Juan.

This statement may give false impressions, however.

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The traditions of the Pueblo Indians, of New Mexico, are to the effect that they came from the north, and also that their ancestors formerly lived in the small houses we have described. But we do not mean to say that all the small houses and pueblos in Arizona and New Mexico are later in date than the cliff-houses. The pressure has always been from the north to the south. Neither would we be understood as saying that all the sedentary tribes, both ancient and modern, belong to the same stock of people. There are several different stocks of people even among the present Pueblos.

In the valley of the Rio Chaco, about midway between the Rio Grande and the San Juan, we meet a group of ruined pueblos whose style of masonry is thought to indicate a greater antiquity than the inhabited pueblo towns; these probably indicate another settlement of these people. As these are really remarkable ruins, we must briefly describe them. In the Chaco Canyon, as indicated on the map, within the space of ten miles are the ruins of eight larger pueblos. Another is located at the very beginning of the canyon, and two more on the edge of the mesas just outside of the canyon. These are large communal houses of regular pueblo type, and, theoretically at least, they should be later in date than the majority of ruins throughout the area

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represented on the map. We think the development has been from small, separate houses, to a closely connected cluster, with a central citadel, which finally drew to itself all the other buildings, and became the communal building we call a pueblo.

We give a restoration of, one--the Pueble Bonito--one of the largest and most important of the ruins. We can not doubt but what the restoration is substantially correct. It shows the open court, the terraced structure, and the system of defense. The circle itself is not as near a half-circle as we would imagine. The ground plan shows that it was really a many-sided building. This pueblo must have presented a striking appearance when it was in a complete state.

Illustration of Restoration of Pueblo Bonito.---------

By comparing this structure with the views of some of the present pueblo towns, we will understand the remarks made earlier, as to the different styles of pueblo structures. This building must have had not far from six hundred and fifty

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rooms. "No single edifice of equal accommodations has ever been found in any part of North America. It would shelter three thousand Indians." This pueblo will compare favorably with some of the structures of Yucatan; though not so ornamental, yet for practical convenience it must have met the wants of the builders fully as well. This may be given as a fair example of the entire class.

The evident plan on which they started to build their structures, is shown in the following plan of the pueblo. But some of them were not fully completed. Two of them had but one wing. In the restoration the court is seen to be closed by a straight row of small buildings, but in most cases the wall inclosing the court was more or less circular. In one case the court was left open. We will only give general descriptions. It is now believed that these great structures were built only a part at a time; perhaps the main body, or a part of it, first. Afterwards, as the number of inhabitants increased, a wing would be added, and then the other; and so, many years would elapse before the pueblo would assume its completed form.

Illustration of Plan of Pueblo Bonito.---------

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These structures ranged in extent from about four hundred to twelve hundred feet in external measurement and could furnish a home to from two hundred to eight hundred or a thousand Indians, and, in one case at least, many more.

In the next cut we have represented the different styles of masonry employed in the pueblos of this valley. It varied all the way from careful piling of big and little stones, and of alternate layers of such materials, to very good masonry indeed. Speaking of it, Mr. Jackson says, "It is the most wonderful feature in these ancient habitations, and is in striking contrast to the careless and rude methods shown in the dwellings of the present pueblos. The material, a grayish-yellow sandstone, breaking readily into thin laminae, and was quarried from the adjacent exposures of that rock. The stones employed average about the size of an ordinary brick, but as the larger pieces were irregular in size, the interstices were filled in with very thin plates of sandstone, or rather built in during its construction; for by no other means could they be placed with such regularity and compactness. So closely are the individual pieces fitted to each other that at a little distance

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no jointage appears, and the wall bears every indication of being a plain, solid surface."

Illustration of Different Styles of Masonry.--------

Besides these important ruins, there are a great many others not especially different from those previously described. We can not state positively that these ruins are of a later date than those of the North; we think they are. From the character of the structures, we are more inclined to class them with the great pueblos of the Rio Grande, Puerco, and Zuni. By examining the map we see that the Rio Chaco would afford a convenient route for them in their migration from the San Juan Valley.

Illustration of Room in Pueblo Bonito. (Bureau of Ethnology.)---

It may be of some interest to notice one of the rooms in this pueblo. Simpson says it is walled up with alternate layers of large and small stones, the regularity of the combination

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producing a very pleasant effect. Mr. Morgan thinks this room will compare not unfavorably with any of equal size to be found in the more imposing ruins of the South. We must notice the ceiling. The probabilities are that the Rio Chelly, further to the west, afforded another line of retreat. Some ruins are found scattered up and down the river or canyon, which we will not stop to describe. Off to the south-west are the inhabited towns or pueblos of the Moquis, who, as we have seen, have a tradition that they came from the north.

There are some ruins found in the south-western part of Arizona which must be described in a general survey of the ruins of the Pueblo country. The river Gila, with numerous tributaries, is the most important stream in that portion of the State. It is in just such a section as we would expect to find ruins, if anywhere. Coronado, as we have seen, invaded the country about three hundred and fifty years ago. At the time of his visit this was then a ruin, for his historian describes one ruin as "a single ruined and roofless house ... the work of civilized people who had come from afar." This gives us a point as to the antiquity of some of the ruins in the Gila Valley. As we shall see, there is every reason to suppose that this section was at one time a thickly inhabited one.

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From the similar character of the remains, we conclude the original inhabitants to be of the same race of people as those we have already described, but what was the exact relation between them we can not tell, but we think a study of the ruins will only confirm the general truth of the traditions of the Pueblo tribes. In any one tradition there is doubtless much that is distorted. One form in which the traditions find expression is: "That they proceeded from the north-west to the upper waters of the Rio Colorado. There they divided, portions ascended by the San Juan, canyon De Chelly, or the more easterly branches of that stream towards the center of New Mexico. Others, passing over the waters of the Rio Verde (see map), descended its valley to the Rio Gila."

One hundred and fifty miles southwest of Zuni we notice the Verde River flowing into the Rio Salado, and the latter into the Gila. Besides those streams, there are other smaller ones, not marked on the map. Mr. Bandelier found near the Canyon del Tule an improvement on the irrigating ditches, that was a lining of concrete; and in this section also was noticed the ruins of both pueblos and the small houses. Near Ft. Apache he found the ruins of the largest villages discovered in Arizona, but we have

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no details of it. The valley of the Rio Verde and Salado seems to have been a favorite resort.

As early as 1854 attention was called to ruins in the Rio Verde. Mr. Leroux reported to Mr. Whipple that the "river banks were covered with ruins of stone houses and regular fortifications, which appeared to have been the work of civilized men, but had not been occupied for centuries. They were built upon the most fertile tracts of the valley, where were signs of acequias (irrigating ditches) and of cultivation. The walls were of solid masonry, of rectangular form, some twenty or thirty paces in length, were of solid masonry, and yet remaining ten or fifteen feet in height. The buildings were of two stories, with small apertures or loop-holes for defence, when besieged."

Mr. Bandelier confirms this account as to the number of ruins. The entire valley of the Verde is filled with ruins of every description. From the account of the valley itself, we can see how well suited it was to the needs of village Indians. Mr. Leroux speaks in high praise of its fertility. Wood, water, and grass were abundant. In the neighborhood of Fort Reno Mr. Bandelier discovered a new architectural feature of great interest to us. This is a raised platform, on which the

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buildings were supported. This raised platform is a very important feature, as we shall learn in the ruins of Mexico and Central America. We have already seen how it was employed by the Mound Builders.

In other words, the detached houses are seen to form villages, with a central stronghold, and the tendency is observed to raise an artificial foundation for this central house, which draws into itself the surrounding houses. This is but another modification of the same idea which, in other sections of this area developed into the communal pueblo. Near Tempe a still more significant arrangement was noticed. Here was a four-sided platform, three hundred and forty feet long by two hundred and eighty feet wide, and five feet high, supported a second platform measuring two hundred and forty by two hundred feet, and six feet high. Elevated platforms, as a general rule, were not very distinct. Mr. Bandelier thinks that, owing to the peculiar drainage of the country, these artificial foundations were required to preserve the buildings from being swept away by a sudden torrent. The settlement of the sedentary tribes in this region cluster on the triangle formed by the Rio Verde, Salado, and Gila Rivers. "This is a warm region, with a scanty rainfall, and but little timber, and the soil is very fertile when

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irrigated, and two crops a year can be readily raised. Mr. Bandelier regards it as exceedingly well adapted to the wants of a horticultural people, and even traces in it some resemblance to Lower Egypt."

A very celebrated ruin on the Gila River gives us a fair idea of what this central stronghold of the village cluster, sometimes supported on a raised foundation, was like. This cut is a view of the principal ruin in this section, which, however, is only a portion of an extensive settlement, covering some five acres in all. The building is not very large, only fifty by forty feet, and four stories, of ten feet each, in height, with a possibility that the central portion of the building rose ten feet higher. The walls are built of adobe, five feet thick at the base, but tapering slightly at the top.

Illustration of Casa Grandee, on the Gila.----------

This house was surrounded by a court-yard which inclosed about two acres. Shapeless mounds, presumably the ruins of houses, are to be seen in various parts of this inclosure. "If the ground

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plan of this great house," says Mr. Bandelier, "with its surroundings of minor edifices, courts and inclosures is placed by the side of the ground plan of other typical ruins, the resemblance is almost perfect except in materials used." This settlement was separated into two divisions. In one place was noticed a large elliptical tank with heavy embankments, nearly eight feet deep.

As to other ruins on the Gila, Mr. Bartlett tells us: "One thing is evident, that at some former period the valley of the Gila was densely populated. The ruined buildings, the irrigating canals, and the vast quantities of pottery of a superior quality, show, that while they were an agricultural people, they were much in advance of the present semi-civilized tribes of the Gila." Speaking of the ruins of the Gila east of the San Pedro River, Emory says: "Whenever the mountains did not infringe too closely on the river and shut out the valley, they were seen in great abundance, enough, I should think, to indicate a former population of at least one hundred thousand; and in one place there is a long wide valley, twenty miles in length, much of which is covered with the ruins of buildings and broken pottery. Most of these outlines are rectangular, and vary from forty to fifty feet to two hundred by four hundred feet."

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It is, however, necessary to be very cautious in judging population by the number of ancient ruins. Prehistoric people were naturally of a roving disposition. The multitude of ruins in Western New York is not regarded as evidence of dense population, but they were occasioned by the known customs of the Indians in changing the sites of their villages "every ten, fifteen, or thirty years; or, in fact, whenever the scarcity of firewood, the exhaustion of their fields, or the prevalence of an epidemic made such a step desirable." Doubtless a similar remark may explain the difference of opinion as to the numbers of the Mound Builders. And, finally, Mr. Bandelier concludes that the great number of ruins scattered through New Mexico and its neighboring territories is by no means evidence of a large population. The evidence of tradition is to the effect that a large number of villages were successively, and not simultaneously, occupied by the same people.

We have about completed our survey of the Pueblo country. We might state that the large communal houses, known as pueblos, are found as far south on the Rio Grande as Valverde. Clusters of separate houses occur as far south as Dona Ana. A range of low mountains lies to the west of the Rio Grande;

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between it and the headwaters of the Gila evidences of ancient habitations were observed on the small streams. Though these occur sometimes in little groups, the court-yards are not connected so as to form a defensive village. Small inclosed surfaces, with no evidence that a house ever was connected with them, were also observed. Mr. Bandelier could only surmise that these were garden-plots, something like the ancient terrace garden-plots in Peru.

Take it all in all, this is, indeed, a singular region, and the Pueblo tribes were a singular people. Their architecture shows us a people in the Middle Status of Barbarism. That they practised agriculture is shown by the presence of old irrigating ditches. Corn and corn-cobs are found in the rubbish-heaps of old settlements. Mr. Morgan thinks that the valley of the San Juan and its numerous tributaries was the place where the Indian race first rose to the dignity of cultivators of the soil.
Cotton cloth has been found in the ruins on the Salado River.
"At the time of the Spanish conquests the Pueblo Indians along the Rio Grande used cotton mantles."

As we have devoted considerable time to the pottery of the Mound Builders, we must see how it compares with the pottery of this

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region. Fragments of pottery are very numerous all over the field of ruins. All explorers mention their abundance. Mr. Holmes on one occasion counted the pieces of pottery that by their shape evidently belonged to different vessels that he found in an area ten feet square. They numbered fifty-five, and we are led to believe they were not more numerous here than in other localities.

We recall that the ornamentations on the vessels of clay made by Mound Builders were either incised lines or indentations on the surface of the vessels. And, still further, the clay vessels themselves were frequently molded in the shape of animals or heads of animals. In this plate we have fragments of indented and corrugated ware, from the San Juan valley. This ware is only found under such circumstances indented and that we are justified in considering it very ancient. The ware made at the time of the conquest was always painted.

Illustration of Indented and Corrugated Ware.--------

At Zuni and some of the other pueblos, at the present day, they

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make vessels in the form of various animals and other natural objects. This is, however, a recent thing. Only one vessel is known that was found under such circumstances that we are justified in thinking it very old. That was molded into a shape resembling some kind of an animal. This was found on the Rio Gila, in New Mexico; and even that has some peculiarities about it that renders its age uncertain. Mr. Bandelier says: "No vessel of ancient date, of human or animal shape, has ever been found." This is a most important point for us to consider, when we recall how numerous were animal-shaped vessels among the Mound Builders.

Illustration of Painted Pueblo Pottery.---------

In this plate we have specimens of the ordinary painted ware from the ancient ruins. The most of these are restorations, but so many fragments have been obtained of each vessel that we have no doubt of the accuracy of the drawings. They decorated their pottery by painting. Even in many cases where they were further ornamented by indentations they still painted it, showing that painting was regarded as of the most importance. We notice that

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the ornamentation consists almost entirely of geometrical figures, parallel lines, and scrolls. Over the entire field of ruins the body of the vessels is of one of two colors; it is either white or red. The color employed to produce the ornamentation is black. There is almost no exception to this rule, though sometimes the ornamentation is of a brownish color with a metallic luster. Along the Rio Grande and the Gila some changes are noticed. The ornamentation is not strictly confined to two colors. Symbolical representations of clouds, whirlwind, and lightning are noticed. The red ware has disappeared, and a chocolate-colored ground takes its place.

All have noticed the superiority of the ancient pottery over that of the present tribes. Says Prof. Putnam. "A comparison of this ancient pottery with that made by the present inhabitants of the pueblos shows that a great deterioration has taken place in native American art, a rule which I think can be applied to all the more advanced tribes of America. The remarkable hardness of all the fragments of colored pottery which have been obtained from the vicinity of the old ruins in New Mexico, Colorado, Arizona, and Utah, and also of the pottery of the same character found in the ruins of adobe houses, and in caves in Utah, shows that the ancient people understood the art of baking earthenware

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far better than their probable descendants now living in the pueblos of New Mexico and Arizona."

We have learned that the remnant of an aboriginal people, now living in the inhabited pueblos of the West, present us, in their primitive usage, with the fading outlines of a culture once widespread in the section of country we have examined. Many of the early sedentary tribes have vanished completely. Traditions state that other tribes have moved southward into regions unknown. "The picture which can be dimly traced to-day of this past is a very modest and unpretending one. No great cataclysms of nature, no wave of destruction on a large scale, either natural or human, appear to have interrupted the slow and tedious development of the people before the Spaniards came. One portion rose while another fell, sedentary tribes disappeared or moved off, and wild tribes roamed over the ruins of their former abode." At present but a few pueblos are left to show us what the people once were. But the fate of the Pueblo of Pecos hangs over them all. The rising tide of American civilization is rapidly surrounding them. Before many decades, possibly centuries, the present Pueblo tribes will yield to their fate. They, too, will be numbered among the vanished races of men.

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(1) The manuscript of this chapter was submitted to Mr. Ad. F. Bandelier, of Highland, Illinois. As agent for the Archaeological Institute of America, he spent three years in explorations in the Pueblo country.

(2) See an excellent historical account by Bandeliers: "Papers of the Archaeological Institute of America." American series No. 1.

(3) The term "City of Zuni" is scarcely correct; it should be Pueblo of Zuni.

(4) Pacific Railroad Report; Whipple, Vol. III., pp. 67 and 68.

(5) "Archaeological Institute of America," Fifth An. Rep., pp. 55 and 56.

(6) Bancroft's "Native Races," Vol. I., p. 534.

(7) His guide.

(8) The ruins on the top were, however, built after 1680, when the inhabitants of Flavona, the Spanish "Alvona," fled to the top of the mesa to escape the forays of the Navajos. The ruins were abandoned before 1705. Zuni is partly built on the ruins of Flavona, which is still its aboriginal name. (Bandelier.)

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(9) Pacific Railroad Reports, Whipple, Vol. III., p. 69.

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(14) Bandelier's "Papers of the Archaeological Inst." p. 46.

(15) These facts are drawn from Mr. Bandelier's article already referred to.

(16) "Colorado River of the West," p. 119, *et seq.*

(17) U.S. Survey, Hayden, 1876, p. 390.

(18) Bandelier, "Fifth Annual Report Archaeological Inst. of America," pp. 62, 68, and 65.

(19) "Contributions to North American Ethnology," Vol. IV, p. 172, *et seq.*

(20) Holmes.

(21) U.S. Survey, Hayden, 1876, p. 419.

(22) Rendered by Ingersoll, in *N.Y. Tribune,* Nov. 3, 1874.

(23) Bandelier, in Fifth Ann. Rep., Arch. Inst., p 79.

(24) U.S. Survey West of 100th M., Vol. VII, p. 358.

(25) "First Annual Report of Bureau of Ethnology," p. 74.

(26) "Fifth Annual Report Arch. Inst.," pp. 42, 78.

(27) Morgan: "Contribution to N. A. Ethnology," Vol. IV, p. 163.

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(28) "Smithsonian Report," 1863, p. 313.

(29) Whipple, Pacific R. R. Report, Vol. III.

(30) Wherever reference is made to Mr. Bandelier's discoveries,

it is taken from the oft-quoted Fifth Annual Report,

Archaeological Institute.

(31) Whipple, Pacific R. R. Reports, Vol. III., p. 14.

(32) Bartlett's "Personal Narrative."

(33) Carr's "Mounds of the Mississippi Valley."

(34) Morgan's "House and House Life," p. 218.

(35) Fifth Annual Report, p. 84.

(36) "Contributions to N. A. Ethnology," Vol. IV., p. 192.

(37) Bandelier's "Fifth Annual Report Arch. Inst.," p. 76.

(38) U.S. Survey West of 100th Meridian, Vol. VII., p. 381.

END OF CHAPTER XI.**********

The Prehistoric World: or, Vanished Races

by E. A. Allen

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Chapter XII

THE PREHISTORIC AMERICANS.

Different views on this subject--Modern system of government--Ancient system of government--Tribal government universal in North America--The Indians not wandering Nomads--Indian houses communal in character--Indian methods of defense--Mandan villages--Indians sometimes erected mounds--Probable government of the Mound Builders--Traditions of the Mound Builders among the Iroquois--Among the Delawares--Probable fate of the Mound Builders--The Natchez Indians possibly a remnant of the Mound Builders--Their early traditions--Lines of resemblance between the Pueblo tribe and the Mound Builders--The origin of the Indians--America inhabited by Indians from a very early time--Classification of the Indian tribes--Antiquity of the Mound Builders' works.

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The attempts to explain the origin of the numerous tribes found in possession of America at the time of its discovery by Europeans have been many and various. There are so many difficulties attending the solution of this problem that even at this day no theory has received that full assent from the scientific world deemed necessary for its establishment as an ascertained fact. New interest has been thrown around this question by the discoveries of late years. In our south-western territories we have clearly established the former wide extension of the village Indians, remnants of which are still to be found in the inhabited pueblos; and, as we have seen, the wide expanse of fertile soil, known as the Mississippi Valley, has undoubtedly been the home of tribes who are generally supposed to have attained a much higher stage of culture than that of the Indians--at least, of such culture as we are accustomed to ascribe, whether justly or not, to Indian tribes. It becomes an interesting question, therefore, to determine what connection, if any, existed between the Mound Builders and the Indian tribes on the one hand, and the Pueblo tribes on the other.

As to the works of the Mound Builders, one class of critical

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scholars think they see in them the memorials of a vanished race, and point out many details of construction, such as peculiarities in form, in size, and position, which they think conclusively prove that the works in question could only have been produced by races or tribes far more advanced in culture than any Indians. This belief finds expression by a well-known writer in the following words: "A broad chasm is to be spanned before we can link the Mound Builders to the North American Indians. They were essentially different in their form of government, their habits, and their daily pursuits." This is substantially the opinion of a great many writers on this subject.

But this conclusion has not been allowed to pass unchallenged. We have on record the convictions of a few careful investigators that there is no necessity for supposing that only an extinct or vanished race could have built the mounds and thrown up the embankments which we observe in the valley of the Ohio and elsewhere; that there is nothing, in fact, either in the construction of the mounds themselves or in the remains of art found in them, which we may not with safety ascribe to the ancestors of our present Indians. It will be seen that we may, indeed, be at a loss to know what conclusion to adopt;

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hence, as an aid to us in this direction, it may be well to inquire into the organization of Indian tribes and their customs and manners at the time of their discovery.

It is not necessary to sketch their history, as this has been done many times. Moreover, it is but a dreary recital of the gradual encroachment of the Whites on the lands of the Indians, the vain endeavors of the latter to repress them, and a record of many cruel acts of savage warfare, burning villages, midnight massacre, and scenes of terrible sufferings. The uniform result was that the Indian tribes were steadily driven away from their ancient homes, until we now find them but a sorry remnant on scattered reservations or grouped together in the Indian Territory. Their ancient institutions are nearly broken down, and it is with difficulty that we can gain an understanding of their early condition; and yet this seems to be necessary before we are prepared to decide on the origin of the mound-building people.

It seems necessary here to briefly describe the two great plans or systems of government, under one or the other of which mankind, as far as we know them, have always been organized, though, theoretically, there must have been a time, in the very

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infancy of the race, when there was either no government or something different from either of them. At the present day, in all civilized countries, government is founded upon territory and upon property. A person is described as living in such a township, county, and state. This seems to be a very simple and natural division, but, like every thing else, it is the result of growth--of a development. It took nearly three centuries of civilization and a succession of able men, each improving on what the other had done, to fully develop this system among the Greeks. This is the basis of the modern form of government. Whenever it was organized, it marked the termination of ancient government. The other plan of government is founded on personal relations.

A person would be described as of such a gens, phratry, and tribe. It is sufficient to state the words gens, and phratry simply denote subdivisions of a tribe. This is the ancient system of government, and goes very far back in the history of the race. It is that state of society which everywhere preceded history and civilization. When we go back to the first beginning of history in Europe, we find the Grecian, Roman, and Germanic tribes in the act of substituting the modern system of government for the tribal state, under which they had passed

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from savagism into and through the various stages of barbarism, and entered the confines of civilization. The Bible reveals to us the tribal state of the Hebrews and the Canaanites.

Under the light of modern research, we can not doubt but what this form of government was very ancient, and substantially universal. It originated in the morning of time, and so completely answered all the demands of primitive society that it advanced man from savagism, through barbarism, and sufficed to enable him to make a beginning in civilization. It was so firmly established as one of the primitive institutions, that when it was found insufficient to meet the demands of advancing society, it taxed to the utmost the skill of the Aryan tribes to devise a system to take its place.

This was the system of government throughout North America when the Spaniards landed on its shores. This is true, at least as far as our investigations have gone. In several cases tribes speaking dialects of the same stock-language had united in a confederacy; as, for instance, the celebrated league of the Iroquois, and in Mexico, the union of the three Aztec tribes. But confederacies did not change the nature of tribal government. As there was but one general form or plan of

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government in vogue amongst the Aborigines of North America at the time of discovery, we ought certainly to find common features in the culture of the Pueblo Indians of the South-west, the Mound Builders of the Mississippi Valley, and the various Indian tribes; and if the lines of resemblance are sufficient to show a gradual progress from the rude remains of savage tribes to the more finished works of the Pueblos, and between these and the Mound Builders, then we may consider this fact as one more reason for believing that they constitute but one people in different stages of development.

The tribal state of society is always associated with village life. It makes no difference where we commence our investigations, we will soon be convinced that village life is the form in which people organized in tribes lived. This is true of the wild tribes in Africa, and of the hill tribes of India to-day. The same was true of the early Greeks. There must be a reason for this. It is found in their peculiar system of government. People divided into groups and clusters would naturally be drawn together into villages. We would expect, then, to find that the Indian tribes lived in villages. We are accustomed to speak of them as wandering nomads. This is scarcely correct; or rather, it is certainly wrong, if applied

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to the tribes east of the Mississippi, when first encountered by the whites. Some of them may have been in a state of migration, in search of better homes, or homes more secure from the attacks of too powerful enemies, as was the case with the Shawnees, and wandering bands on hunting or warlike expeditions were common enough. The Germanic, tribes that overthrew the Roman Empire, for a similar reason, were in a migrating state. But it is none the less certain that they established permanent villages wherever they found suitable places.

Nearly all the tribes claimed separate districts, in which they had permanent villages, often stockaded. The site of Montreal was a famous Indian village, and other villages were found in Canada. The Iroquois tribes had permanent villages, and resided in them the greater part of the year. One visited in 1677 is described as having one hundred and twenty houses, the ordinary one being from fifty to sixty feet long, and furnishing shelter to about twelve families. In one case, at least, the town was surrounded by palisades.

In 1539 De Soto made his appearance on the coast of Florida. Four years later a feeble remnant of this expedition landed at Panuco, Mexico. His route has not been accurately traced, but it

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is certain he travelled the Gulf States and crossed the Mississippi. De Soto himself found a grave in the waters of this river, but under new leaders the expedition pushed on through Arkansas, and probably found its most western point on the prairies of the West, where, disheartened, it turned back to near where De Soto died, constructed some rude boats, and floated down the Mississippi, and so to Mexico. We have two accounts written by members of this expedition, and a third, written by Garcilasso de La Vega from the statements of eye-witnesses and memoranda which had fallen into his hands.

From these considerable can be learned of the Southern Indians before they had been subjected to European influences. One of the first things that arrests attention is the description of the villages. They found, to be sure, some desert tracts, but every few miles, as a rule, they found villages containing from fifty to three hundred spacious and commodious dwellings, well protected from enemies--sometimes surrounded by a wall, sometimes also by a ditch filled with water. When west of the Mississippi they found a tribe living in movable tents, they deemed that fact worthy of special mention. But in the same section they also found many villages.

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One hundred and forty years afterward the French explorer, La Salle, made several voyages up and down the Mississippi. He describes much the same state of things as do the earlier writers. The tribes still dwelt in comfortable cabins, sometimes constructed of bark, sometimes of mud, often of large size, in one case forty feet square, and having a dome-shaped roof. Nor was this village life confined to the more advanced tribes. The Dakota tribes, which include the Sioux and others, have been forced on the plains by the advancing white population, but when first discovered they were living in villages around the headwaters of the Mississippi. Their houses were framed of poles and covered with bark.

Lewis and Clark, in 1805, found the valley of the Columbia River inhabited by tribes destitute of pottery, and living mainly on fish, which were found in immense quantities in the river. They describe them as living in large houses, one sometimes forming a village by itself. They describe one house capable of furnishing habitations for five hundred people. Other authorities could be quoted, showing that the Algonquin Indians, living in Eastern and Atlantic States, had permanent villages. The idea then, that the Indians are nothing but wandering savages, is seen to be wrong. It is well to bear this

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in mind, because it is often asserted that the Mound Builders must have been a people possessing fixed habitations. While this is doubtless correct, we see that it is also true of the Indians.

There is another feature of Indian life which we will mention here, because it shows us a common element in the building of houses, seen alike in the pueblo structures of the West and the long houses of the Iroquois. That is, the Indian houses were always built to be inhabited by a number of families in common. All nations in a tribal state possess property in common. It is not allowed to pass out of the gens of the person who possesses it, but at his death is supposed to be divided among the members of his gens; in most cases, however, to those nearest of kin within the gens. This communism showed itself in the method of erecting houses.

The long house of the Iroquois was divided into apartments so as to shelter from one hundred to two hundred Indians. A number of these houses gathered together composed a village. These were quite creditable structures of Indian art, being warm and comfortable, as well as roomy. Should we examine the whole list of writers who have mentioned Indian villages, we would find

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them all admitting that the houses were usually occupied by a number of families, one in the Columbia Valley, as we see, sheltering five hundred persons.

There is no question but the pueblos were built by people holding property in common. They were, of course, erected by a more advanced people, who employed better materials in construction, but it is quite plain that they were actuated by the same instincts, and built their houses with the same design in view as the less advanced Indian tribes in other sections of the country. What we have described as the small houses in Arizona in the preceding chapter, in most cases includes several rooms, and we are told that in one section they "appear to have been the abode of several families."

Illustration of Long House of the Iroquois.---------

One of the main points the Indians would have to attend to in the construction of their villages was how to defend them, and we can not do better than to examine this point. A French writer represents the villages of Canada as defended by double, and

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frequently triple, rows of palisades, interwoven with branches of trees. Cartier, in 1535, found the village of Hochelaga (now Montreal) thus defended. In 1637 the Pequot Indians were the terror of the New England colonies, and Capt. Mason, who was sent to subject them, found their principal villages, covering six acres, strongly defended by palisades.

Illustration of Stockaded Onondaga Village.--------

The Iroquois tribes also adopted this method of defense. In 1615 Champlain, with Indian allies, invaded the territory of the Iroquois. He left a sketch of his attack on one of their villages. This sketch we reproduce in this illustration, which is a very important one, because it shows us a regularly palisaded village among a tribe of Indians where the common impression in reference to them is that they were a wandering people with no fixed habitations. The sketch is worthy of careful study. The buildings within are the long houses which we have just described. They are located near together, three or four in a group. The arrangement of the groups is in the form of a square, inclosing a court in the center. This tendency to

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inclose a court is a very common feature of Indian architecture. Such, as we have seen, is the arrangement of the pueblos. Such was also the arrangement of the communal buildings in Mexico, Central America, and Peru. In this case the village covered about six acres also. The defense was by means of palisades. There seem to be two rows of them. They seem to have been well made, since Champlain was unsuccessful in his attack. In earlier times these fortified villages were numerous.

Illustration of Pomeiock. (Bureau of Ethnology.)-----

Further south, this method of inclosing a village was also in use. In 1585 the English sent an expedition to the coast of North Carolina. An artist attached to this expedition left some cuts, one of which represents a village near Roanoke. It is surrounded, as we see, by a row of palisades, and contains seventeen joint tenement houses, besides the council house. The historians of De Soto's expedition make frequent mention of walled and fortified towns. "The village of Mavilla," from which comes our name Mobile, says Biedman, "stood on a plain surrounded by strong walls." Herrera, in his General History,

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states that the walls were formed by piles, interwoven with other timber, and the spaces packed with straw and earth so that it looked like a wall smoothed with a trowel.

Speaking of the region west of the Mississippi, Biedman says: "We journeyed two days, and reached a village in the midst of a plain, surrounded by walls and a ditch filled by water, which had been made by Indians." This town is supposed to have been situated in the north-eastern part of Arkansas, and it is interesting to note that recent investigators find what are probably the remains of these walled towns, in the shape of inclosures with ditches and mounds, in North-eastern Arkansas and South-eastern Missouri. The tribes throughout the entire extent of the Mississippi Valley were accustomed to palisade their villages--at least, occasionally.

Illustration of Mandan Village. (Bureau of Ethnology.)------

On the Missouri River we find some Indian tribes that have excited a great deal of interest among archaeologists. It has been surmised that, if their history could be recovered, it

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would clear up a great many difficult questions. They were accustomed to fortify their village's with ditches, embankments, and palisades. This gives us a cut of one of their villages. It is to be observed that it has a great likeness to some of the inclosures ascribed to the Mound Builders.

This has been noted by many writers. Says Brackenridge: "In my voyage up the Missouri I observed the ruins of several villages which had been abandoned twenty or thirty years, which in every respect resembled the vestiges on the Ohio and Mississippi." Lewis and Clark, in their travels, describe the sites of several of these abandoned villages, the only remains of which were the walls which had formerly inclosed the villages, then three or four feet high. The opinion has been advanced that the inclosures of the Mound Builders were formerly surmounted by palisades. Mr. Atwater asserts that the round fort which was joined to a square inclosure at Circleville showed distinctly evidence of having supported a line of pickets or palisades.

Should it be accepted that the inclosures of the Mound Builders represent village sites, and that they were probably further protected by palisades, it would seem, after what we have just observed of the customs of the Indians in fortifying their

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villages, to be a simple and natural explanation of these remains.

We have already referred to the fact that scholars draw a distinction between the more massive works found in the Ohio Valley and the low, crumbling ruins occupying defensive positions found in such abundance along Lake Erie and in Western New York, asserting the former to be the works of the Mound Builders proper, and the latter the remains of fortified Indian villages. This may be true, but it seems to us that there is such a common design running through all these remains that it is more reasonable to infer that the more massive works were constructed by people more advanced than those who built the less pretentious works, but not necessarily of a dilterent race. We can not do better than to quote the remarks of Mr. Brackenridge in this connection: "We are often tempted by a fondness for the marvelous to seek out remote and impossible causes for that which may be explained by the most obvious."

But inclosures and defensive works are only a small part of the Mound Builders' remains. We know that large numbers of mounds are scattered over the country, and we recall in this connection what was said as to the erection of mounds by Indian tribes in a

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preceding essay. Somewhat at the risk of repetition we will once more examine this question. It is generally admitted that it was the custom of Indian tribes to erect piles of stones to commemorate several events, such as a treaty, or the settlement of a village, but more generally to mark the grave of a chief, or some noted person, or of a person whose death occurred under unusual circumstances. These cairns are not confined to any particular section of the country, being found in New England, throughout the South, and generally in the Mississippi Valley. From their wide dispersion, and from the fact that they do not differ from the structures built by Indian tribes within a few years past, it is not doubted but what they are the works of Indians.

Now, if we could draw a dividing line, and say that, while the Indians erected mounds of stone, the Mound Builders built theirs of earth, it would be a strong argument in favor of a difference of race. But this can not be done. When De Soto landed in Florida, nearly three hundred and fifty years ago, he had an opportunity of observing the customs of the Indians as they were before the introduction of fire-arms, and before contact with the Whites had wrought the great change in them it was destined to. Therefore, what few notes his historians have given us of

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the ways of life they observed amongst the southern tribes are of great importance in this connection. At the very spot where he landed (supposed to be Tampa Bay) they observed that the house of the chief "stood near the shore, upon a very high mound, made by hand for strength."

Garcilasso tells us "the town and the house of the Cacique (chief) Ossachile are like those of the other caciques in Florida. ... The Indians try to place their villages on elevated sites, but, inasmuch as in Florida there are not many sites of this kind where they can conveniently build, they erect elevations themselves, in the following manner: They select the spot, and carry there a quantity of earth, which they form into a kind of platform, two or three pikes in height, the summit of which is large enough to give room for twelve, fifteen, or twenty houses, to lodge the cacique and his attendants. At the foot of this elevation they mark out a square place, according to the size of the village, around which the leading men have their houses. To ascend the elevation they have a straight passage-way from bottom to top, fifteen or twenty feet wide. Here steps are made by massive beams, and others are planted firmly in the ground to serve as walls. On all other sides of the platform the sides are cut steep."

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Biedman, the remaining historian, says of the country in what is now (probably) Arkansas. "The caciques of this country make a custom of raising, near their dwellings, very high hills, on which they sometimes build their huts." Twenty-five years later the French sent an expedition to the east coast of Florida. The accounts of this expedition are very meager, but they confirm what the other writers have stated as to the erection of platform mounds with graded ways. Le Moyne, the artist of this expedition, has left us a cut of a mound erected over a deceased chief. It was, however, but a small one.

La Harpe, writing in 1720, says of tribes on the lower Mississippi: "Their cabins ... are dispersed over the country upon mounds of earth made with their own hands." As to the construction of these houses, we learn that their cabins were "round and vaulted," being lathed with cane and plastered with mud from bottom to top, within and without. In other cases they were square, with the roof dome-shaped, the walls plastered with mud to the height of twelve feet." It is interesting to observe how closely what little we do know about Mound Builders' houses coincides with the above.

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Recent investigations by the Bureau of Ethnology have brought to light vestiges of great numbers of their buildings. These were mostly circular, but those of a square or rectangular form were also observed. In Arkansas their location was generally on low, flat mounds, but vestiges of some were also noticed near the surface of large mounds. In Southern Illinois, South-eastern Missouri, and Middle and Western Tennessee the sites of thousands were observed, not in or on mounds, but marked by little circular, saucer-shaped depressions, from twenty to fifty feet in diameter, surrounded by a slight earthen ring. We know the framework of these houses was poles, for in several cases the charred remains of these poles were found. We know they were plastered with a thick coating of mud, for regular layers of lumps of this burnt plastering are found. These lumps have often been mistaken for bricks, as in the Selzertown mound. In several cases the plastering had been stamped with an implement, probably made of split cane of large size.

On the lower Mississippi we meet with the Natchez, a tribe that has excited a great deal of interest; but at present we only want to note that they also constructed mounds. They were nearly exterminated by the French in 1729. But before this Du Pratz had lived among them, and left a description of their customs.

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Their temple was about thirty feet square, and was situated on a mound about eight feet high, which sloped insensibly from its main front on the north, but was somewhat steeper on the other sides. He also states that the cabin of the chief, or great sun, as he was called, was placed upon a mound of about the same height, though somewhat larger, being sixty feet over the surface. A missionary who labored among them, stated that when the chief died his mound was deserted, and a new one built for the next chief.

Neither was this custom of erecting mounds confined to the Southern Indians. Colden states of the Iroquois: "They make a round hole in which the body is placed, then they raise the earth in a round hill over it." It was the custom among a large number of tribes to gather together the remains of all who had died during several years and bury them all together, erecting a mound over them. Mr. Jefferson, in his notes on Virginia, describes one of these mounds, and relates this interesting fact in reference to it: "A party of Indians passing about thirty years ago through the part of the country where this barrow is, went through the woods directly to it, without any instructions or inquiry; and having staid about it some time, with expressions which were construed to be those of

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sorrow, they returned to the high road, which they had left about a half dozen miles to pay this visit, and pursued their journey."

Coming down to our own times, the Indians had lost a great many of their ancient customs, yet, at times, this old instinct of mound burial asserts itself. About the first of the century Blackbird, a celebrated chief of the Omahas, returning to his native home after a visit to Washington, died of the small-pox. It was his dying request that his body be placed on horseback, and the horse buried alive with him. Accordingly, in the presence of all his nation, his body was placed on the back of his favorite white horse, fully equipped as if for a long journey, with all that was necessary for an Indian's happiness, including the scalps of his enemies. Turfs were brought and placed around the feet and legs, and up the sides of the unsuspecting animal, and so gradually the horse and its rider were buried from sight, thus forming a good-sized burial mound. Another instance came under Mr. Catlin's observation at the pipe stone quarry in Dakota. He visited there about 1832 and saw a conical mound, ten feet high, that had been erected over the body of a young man accidentally killed there two years before.

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Enough references have now been given to show that the Indian tribes certainly did erect mounds, and that there is every reason to suppose they were the authors of the temple mounds of the South, or of some of them, at any rate. We have now shown that, according to early writers, the Indians did live in permanent villages, often stockaded, and knew very well how to raise embankments and mounds. It would seem as if this removed all necessity for supposing the existence of an extinct race to explain the numerous remains, collectively known as Mound Builders' works. Yet, as this is surely an important point, it may be well to carry the investigations a little further.

Taking in account the great amount of labor necessary to raise such structures as the mounds at Cahokia and Grave Creek, and the complicated works at Newark, some writers have asserted that the government of the Mound Builders was one in which the central authority must have had absolute power over the persons of the subjects, that they were in effect slaves; and as this was altogether contrary to what is known amongst Indian tribes, they must have been of a different race.

If the Indians in a tribal state are known to have erected some

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mounds, and to have built temple-platforms and walled towns in the south, then all they needed was sufficient motive, religious or otherwise, to have built the most stupendous works known. We think the ruined pueblos in the Chaco Canyon represent as great an amount of work as many of those of the Mound Builders. A calculation has been made, showing that over thirty million pieces of stone were required in the construction of one pueblo, besides an abundance of timber. Each piece of stone had to be dressed roughly to fit its place; the timbers had to be brought from a considerable distance, cut and fitted to their places in the wall, and then covered with other courses, besides other details of construction, such as roof-making, plastering, and so forth, and this is not the calculation of the largest pueblo either. Yet no one supposes that the Indian tribes who erected these structures were under a despotic form of government.

We think, however, that it might be freely admitted that in all probability the government of the Mound Builders was arbitrary, but so was the government of a great many Indian tribes. Amongst the Natchez the chief was considered as descended from the sun. Nor was this belief confined to the Natchez, as the tribes of the Floridian Peninsula asserted the same thing of

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their chiefs. Among all these latter tribes the chief held absolute and unquestioned power over the persons, property, and time of their subjects.

Amongst the Natchez the power of the Great Sun (their title for chief) seems to have been very great. This nation had a regularly organized system of priesthood, of which the chief was also the head. On the death of the chief a number of his subjects were put to death to keep him company. But we must notice that the subjects considered it an honor to die with the chief, and made application beforehand for the privilege. Bearing these facts in mind, it does not seem improbable that in more distant days, when the Natchez or some kindred tribe were in the height of their power, the death of some great chief might well be memorialized by the erection of a mound as grand in proportion as that of Grave Creek.

In fact, the more we study the subject, the more firmly we become convinced that there is no hard and fast line separating the works of the Mound Builders from those of the later Indians. We therefore think that we may safely assert that the best authorities in the United States now consider that the mound building tribes were Indians, in much the same state of culture

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as the Indian tribes in the Gulf States at the time of the discovery of America, and we shall not probably be far out of the way if we assert, that when driven from the valley of the Ohio by more warlike people they became absorbed by the southern tribes, and, indeed the opinion is quite freely advanced that the Natchez themselves were a remnant of the "Mysterious Mound Builders."

If the Mound Building tribes were here at a comparatively late date, we ought to expect to find some traditions of their former existence. The statement is quite often made that the Indians had no tradition as to the origin or purpose of the mounds, and from this it is argued that the mounds are of great antiquity. But, instead of finding no traditions, we find nearly every tribe possessed of some, and often very full and distinct. It makes no difference that a number of those traditions are childish, and that traditions are a very unsatisfactory sort of proof at best. Still, if we observe that the traditions, such as they are, are corroborative of other proofs, it is well to examine into them anyway.

The Iroquois tribes have a tradition, that is given in the writing of Cusick, a Tuscaroa Indian. It is generally considered

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as a nonsensical production, but Mr. Hale points out that, "whenever his statements can be submitted to the tests of language, they are invariably confirmed." Such, for instance, are the assertions that they formerly inhabited the country around the St. Lawrence River in Canada, and further, that the Mohawk was the oldest tribe, from whence the others separated in time.

The substance of the tradition supposed to refer to the Mound Builders, is as follows: South of the great lakes was the seat of a great empire. The emperor resided in a golden city. The nations to the north of the great lakes formed a confederacy, and seated a great council fire on the river St. Lawrence. This confederacy appointed a high chief as ambassador, who immediately departed to the south to visit the emperor at the golden city. Afterwards, the emperor built many forts throughout his dominions, and almost penetrated to Lake Erie. The people to the north considered this an infringement on their territory, and it resulted in a long war.

The people of the north were too skillful in the use of bows and arrows, and could endure hardships which proved fatal to a foreign people. At last, the northern people gained the victory,

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and all the towns and forts were totally destroyed and left in ruins. If this tradition stood alone, it would not be deserving of much attention, but we know the Iroquois tribes did originally live in the valley of the St. Lawrence. We also feel sure the Mound Builders were a powerful people, and lived in the Ohio Valley. What is there unreasonable, therefore, in supposing that the Iroquois came in contact with them, and that this tradition rests on facts?

But this tradition is very similar to one among the Delawares. This tribe spoke a different stock language than the Iroquois, and belonged to the Algonquin division of the Indian tribes. There were many wars between the Delawares and the Iroquois, but finally the latter were acknowledged masters. It is well to keep this in mind, because with this feeling between the two tribes, they would not be apt to have similar traditions unless there was a basis of fact.

Mr. Gallatin informs us that the original home of the Algonquins was to the north of Lake Superior. The tradition states that the Delawares (they called themselves the Leni-lenape) were living in a cold, fir-tree country--evidently the wooded regions north of Lake Superior. Getting tired of this country, they set out

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towards the East in search of a better place, and probably followed the lake shore around until they finally came to a great river--that is, the Detroit. The country beyond was inhabited by a numerous and powerful people, called the Allegewi, who dwelt in great fortified towns. Here they found the Huron-Iroquois tribes. This was before the Iroquois had separated from the Hurons.

Some treachery on the part of the Allegewi was made the occasion of war. The Leni-lenape and the Hurons united their forces. This is perhaps the Confederacy of Cusic. A long war resulted, but in the end the Allegewi were defeated, and, as the tradition states, "all went southward." We see no reason to doubt but what we have here a traditional account of the overthrow of the Mound Builders. The remnant that fled south found the country inhabited by mound-building tribes, and doubtless became absorbed among them. In confirmation of this view it may be said that the languages of the tribes of the Gulf States, which belong to one stock language, have all been greatly influenced by words derived from a foreign source.

Perhaps a large body of them may have lived on as a fully organized tribe. As we have already stated, the opinion is quite

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freely advanced that this is the origin of the Natchez.

It seems advisable to inquire more particularly into the customs and traditions of this tribe. Du Pratz, who lived among them in 1718, and claims to have enjoyed the confidence of their chiefs and principal men, has left the most complete account of them; though Father Charlevoix, a Jesuit priest, in his letters, also describes them fully.

A number of interesting statements in regard to them, at once arrest attention. Most of the tribes in the southern region of the United States spoke dialects of a common stock language (Chata-muskoki), showing a derivation from a common source. The Natchez spoke a different language. Sun-worship seems to have been carried to a greater extent than among any other tribes we are acquainted with. As late as 1730 they still had their temples, where the eternal fire was kept burning, carefully watched; for they believed that should it become extinguished, it would surely bring great trouble on the tribe. Among the Natchez, if anywhere among Indian tribes, the power of the chief was absolute, and there seems to have been something like privileged classes amongst them. We have already referred to them as Mound Builders.

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But most interesting is it to learn of their former wide extension and ancient power. Du Pratz says, "According to their traditions they were the most powerful nation of all North America, and were looked upon by other nations as their superiors, and on that account were respected by them. To give an idea of their power, I shall only mention that formerly they extended from the River Manchas, or Iberville, which is about fifty leagues from the sea, to the River Wabash, which is distant from the sea about four hundred and sixty leagues; and that they had about eight hundred suns, or princes." It is at least a reasonable supposition that that the Natchez were a remnant of the Mound Builders.

So far we have dwelt chiefly on the relations between the Indians and the Mound Builders. Let us now see if we can not detect some connection between the Pueblo tribes of the south-west and the Mound Builders. All the tribes in the Gulf States had traditions of a western and south-western origin. In regard to the Creek Indians, this tradition is very distinct. They relate, with many details, their journey from the west, their fight with the Alabamas, etc. In the Natchez tradition, as given by Du Pratz, they are seen, not only to come from the same western source, but distinctly preserve

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recollections of pueblo houses.

The substance of their traditions is that they came from a pleasant country and mild climate, "under the sun," and in the south-west, where the nation had lived for many ages, and had spread over an extensive country of mountains, hills, and plains, in which the houses were built of stone, and were several stories high. They further relate how, owing to increase of enemies, the great sun sent some one over to examine and report on the country to be found to the east. The country being found extremely pleasant, a large part of their nation removed thither; and, after many generations, the great sun himself came also. Speaking of the ancient inhabitants of the country they came from, the tradition states that "they had a great number of large and small villages, which were all built of stone, and in which were houses large enough to lodge a whole tribe."
We would offer the same suggestion on these traditions as on the others. They are of value only so far as supported by other testimony. The great objection to them is that the pueblo structures of the west are evidently of recent origin. So these traditions would prove that the Natchez Indians were quite recently connected with the Pueblo tribes, which is not at all probable. We have some slight evidence that does not rest on

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traditions. Mr. Holmes has given us a plan of an ancient village he discovered on the La Platte River, San Juan Valley. It will be seen by reference to the plate that the buildings were separated from each other. The forms are chiefly rectangles and circles, and one or two seem to have been elliptical.

This description certainly reminds us of the circles and squares so common among the Mound Builders. But there is also a truncated mound, fifty by eighty feet, and nine feet high.

"Its flat top and height give it more the appearance of one of the sacrificial mounds of the Ohio Valley than any others observed in this part of the West." Mounds are known to exist in Utah.

Illustration of Ruins near the La Platte Valley of the San Juan.

We need not expect to trace a continuous line of ruins from the San Juan Valley to that of the Ohio, granting the migration to have taken place, because a migrating race would not be apt to erect monuments until they reached the end of their line of migration. Those who take this view of it say that it is not at all strange that when these migrating tribes reached their new

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homes in the Mississippi Valley they erected structures differing from those they had formerly built, because all their surroundings would be different, and in the prairie sections they would find neither stone for building their pueblos nor clay suitable for adobe construction. So they would do the next best thing, and build a fortified village. This is the view of that eminent scholar, Mr. Morgan. It must be borne in mind, however, that the fortified villages of the southern Indians, including those of the Mississippi Valley, corresponded more nearly with those of the Atlantic shore, and more northern tribes, than with the pueblo structures.

There is another line of proof which we think has been read the wrong way, or, at least, applied too strongly, and made to do service in proving that the Mound Builders migrated from the valley of the Ohio to Mexico, and there laid the foundation of that wonderful civilization which is yet a riddle to the antiquarian. This is derived from a study of the skulls procured from various sections of this country, Peru, and Mexico. It is sufficient to state that anatomists have made a careful study of the skulls of individuals of various nations, and instituted certain comparisons between them, and discoveries of great importance have been made by this means. Now, some of

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our best American scholars have insisted that the skulls of the Mound Builders and the ancient inhabitants of Mexico and the Inca Peruvians are so similar that they must have belonged to the same race.

This type of skull, however, is characteristic, not only of the Mound Builders, the ancient Mexicans and the Peruvians, but of the Pueblos, and of such tribes as the Natchez, Creeks, and Seminoles. We think, with all due regard to the opinions of others, that in the present state of our knowledge of craniology we are not authorized in drawing very important conclusions therefrom. About all we are justified in stating is that the sedentary or village Indians, whether found in North or South America, have certain common features.

It is also hard to see any great resemblance between the works of the Mound Builders and the Pueblo tribes. The truncated mounds discovered by Mr. Holmes, we remember, were also used as foundations for house structures along the Gila. In this feature we, of course, see a resemblance to the platform mounds of the Mississippi Valley. But we must be careful in tracing connections on such a slim basis as this. We must remember also what a difference there is in the pottery of the two

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sections. If we were to give an opinion, based on the present known facts, we should say the separation between the people who afterwards developed as the pueblo builders of the west and the Mound Builders of the Mississippi Valley took place at an early date.

But let us not suppose that this conclusion clears up all mysteries. A problem which has thus far defied the efforts of some of our best thinkers is still before us, and that is: "From whence came the Indians?" As we remarked at the beginning of this chapter, no one theory has yet received universal acceptance. In view of these facts, it is not best to present any theories, but content ourselves with such statements as seem reasonably well settled. On all hands it is agreed that the Indians have been in America a long while, and whatever advance they were able to make in the scale of civilization has been achieved in this country.

This statement implies that they were in undisturbed possession of this country long enough for some tribes of them to reach the middle status of barbarism, which means advancement sufficient to enable them to cultivate the ground by irrigation, and to acquire a knowledge of the use of stone and adobe brick in

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building. More than half the battle of civilization had then been won. Look at it as we will, this demands an immense period of time for its accomplishment. In the arts of subsistence, government, language, and development of religious ideas the advancement they had been able to make from a condition of savagism to that in which the Mound Builders evidently lived, or the Aztecs in Mexico, represents a progression far greater than from thence to civilization.

We are, therefore, sure that the Indians have inhabited this country for an extended period. We can prolong the mental vision backwards until we discover them, a savage race, gaining a precarious livelihood by fishing and the chase. In America there was but one cereal, or grain, growing wild. That was maize, or Indian corn. We can not tell in what portion of the continent it was native, but, in whatever section it was, there, probably, first commenced permanent village life.

A settled residence, and being no longer dependent on hunting for a livelihood, would advance the Indians greatly in the scale of culture. So we can understand how in one section would arise Indian tribes possessed of quite complicated systems of government and religion and a knowledge of agriculture. And from

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this as a center they would naturally spread out to other sections. The conclusion to which we seem driven is, that there is no necessity for supposing the Mound Builders to be any thing more than village Indians, in much the same state of development as the southern Indians at the time of the discovery. The Indian race shows us tribes in various stages of development, from the highly developed Pueblo Indians on the one hand to the miserable Aborigines of California on the other.

These various tribes may be classified as the wild hunting tribes and the sedentary, partially civilized tribes. To this last division belong the Mound Builders. We have seen how the partially civilized tribes in the valley of the San Juan were gradually driven south by the pressure of wild tribes. We need not doubt but such was the case in the Mississippi Valley. But we need not picture to ourselves any imposing movement of tribes. In one location a mound-building tribe may have been forced to abandon its territory, which would be occupied by bands of hunting tribes. In other cases they would cling more tenaciously to their territory. The bulk of them may have been forced south; some in other directions, and, like the Pimas on the River Gila, or the Junanos east of the Rio Grande, have retrograded in culture. Some bands may even have reached

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Mexico, and exerted an influence on the culture of the tribes found there.

It is only necessary to add a brief word as to the antiquity of the Mound Builders' works, or rather as to the time of abandonment. On this point there is a great diversity of opinion, and it seems to us almost impossible to come to any definite conclusion. The time of abandonment may vary greatly in different sections of the country, and we have seen how apt Indian tribes, even in the same section, are to abandon one village site in order to form another a few miles away. Fort Hill, in Ohio, that so strongly impressed its first explorers with a sense of antiquity, may have been abandoned long before the Circleville works, where Mr. Atwater could still distinguish vestiges of the palisades that once helped to defend it.

We have said about all that can be said in a brief review of the prehistoric life in America north of Mexico. We have seen how much there is still for our scholars to work up before we can profess to as full and complete a knowledge as we have of the prehistoric life in Europe. We are just on the threshold of discoveries in regard to the Paleolithic Age in this country.

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The southern boundary of the great ice sheet is now known to us. Many scholars have pointed out to us the scattering bits of evidence going to show that the ancestors of the present Eskimos once inhabited the interior of this continent. Dr. Abbott has found unmistakable evidence of the presence of such a people in New Jersey. Our Indian tribes who came next, are not properly prehistoric, though many questions relating to them belong to that field.

We have examined the works of the people known as Mound Builders. They are indeed varied and full of interest, but our conclusion leaves their origin involved in the still deeper question of the origin of the Indian race. We are satisfied that they were village Indians and not tribes of a vanished people. We have also examined that section of country wherein the greatest development of village Indian life north of Mexico took place. It would be very satisfactory could we show lines of migration from the valley of the San Juan, as a center, to the Mississippi Valley on the one hand, and to Mexico and the South on the other. We can find some lines of evidence, but not enough to positively state such an important truth.

We must now leave this field of inquiry. We trust such of our

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readers as have followed us in these pages will have clearer ideas of the prehistoric life in North America. They must however regard this knowledge as simply a foundation, a starting-point, or as the shallows along the shore, while the massive building, the long journey, or the great ocean, is still before them. Our scholars are giving their time and attention to these problems. They are learning what they can of the traditions and myths of the tribes still existing. They are studying their languages and plan of government. They are also making great collections of the works of their hands. We will hope some day for clear light on all these topics, which will either confirm our present conclusions or show us wherein we must change them, or, perhaps, reject them altogether.

Illustration of Stone Mask found in Tennessee.----------

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(3) Carr's "Mounds of the Mississippi Valley." Schoolcraft's "Archives of Aboriginal Knowledge," Vol. I., p. 66; Vol. II., p. 30. Morgan's "House and House Life American Aborigines," Vol. IV.; "Contributions to N. A. Ethnology," p. 199. Brinton: *American Antiquarian,* October, 1881. Thomas: *American Antiquarian,* March, 1884. Powell: Transactions of Anthropological Society, 1881, p. 116.

(4) Of course these words vary in different nations, but the meaning is the same in all.

(5) Morgan's "Ancient Society," p. 269.

(6) The gens, phratry, and tribe were subdivisions of the Ancient Greeks. Of a similar import were the gens, curiae, and tribe of the Roman tribes. The Irish sept and the Scottish clan are the same in meaning as the gens of other tribes. American authors, in treating of the Indians, have generally used the words tribe and clan as equivalent of gens. This is not correct. Almost all the tribes had a complete organization in gens and phratries, though of course they did not so name them. These terms are adopted by Mr. Morgan because they have a precise and

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historical meaning. As an example of Indian tribal-organization, we give an outline of the Seneca-Iroquois tribe.

First Phratry, Bear
or Wolf Gens.
Brotherhood. Beaver
Turtle

TRIBE.

Second Phratry, Deer
or Snipe Gens.
Brotherhood. Heron
Hawk

It is proper to remark that the phratries are not a necessary member of the series. Several of the Indian tribes had only gens and tribe. Mr. Schoolcraft uses the words totemic system to express the same organization. Totem, the Ojibway dialect, signifies the symbol or devise which they use to designate the gens. Thus the figure of a bear would be the totem of the bear gens. We must remember that the tribes of to-day have, in many cases, lost their ancient organization. See Morgan's "Ancient Society," where this subject is fully treated. Also Powell, in "First Annual Report of Bureau of Ethnology;" Grote's "History

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of Greece," Vol. III, p. 55, *et seq.*; Smith's "Dictionary of Greek and Roman Antiquities," articles, gens, civitas, tribus, etc.; also Dorsey, in *American Antiquarian*, Oct., 1883, p. 312, *et seq.*

(7) The Mexican tribes form no exception to this statement. See this volume, Chapter XV.

(8) Lewis's "Wild Races of South-eastern India."

(9) Grote's "History of Greece," Vol. II.

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(14) "Historical Collections of Louisiana," Vol. I, p. 61.

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(16) Read Capt. John Smith, "Hist. of Virginia;" also "Mass. Hist. Col.," Vol. VIII, of the third series.

(17) Consult "The Mounds of the Mississippi Valley," by Lucian Carr, of the Kentucky Graphical Survey, where this subject is fully treated, and copious quotations given.

(18) Morgan's "Ancient Society," p. 526.

(19) Bandelier's "Fifth Annual Report, Arch. Inst.," p. 60.

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(20) "Charlevoix's Travels in North America," p. 241.

(21) Fourth Annual Report of Peabody Museum, and from information furnished me by the U.S. Bureau of Ethnology.

(22) "The custom of palisading appears to have been general among the northern tribes."--Brackenridge's "Views of Louisiana," p. 182.

(23) "Views of Louisiana," p. 183.

(24) "Archaeology Americanae," Vol. I., p. 145.

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(26) Carr: "Mounds of the Mississippi Valley," p. 78.

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(28) Hist. Col. of Louisiana, Vol. II., p. 105.

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(30) "Expedition to Florida," p. 15.

(31) Shea's "Early Voyages on the Mississippi," p. 135. "Historical Collections of Louisiana," Vol. I., p. 61. Quoted from Cyrus Thomas in *American Antiquarian,* March, 1884.

(32) See article by Cyrus Thomas, of the Bureau of Ethnology, in *American Antiquarian,* March, 1884.

(33) "History of Louisiana," Lond., 1763, Vol. II., pp. 188 and 211.

(34) Father Le Petit: Note, p. 142. "Hist. Col. Louisiana," Vol. III.

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(35) "Hist. of the Five Nations," Introduction, p. 16.

(36) Smithsonian Contribution to Knowledge, No. 259, p. 15; "Mounds of the Mississippi Valley," p. 87.

(37) "Notes on Virginia," p. 191.

(38) Catlin's "North American Indians," p. 95.

(39) Foster's "Prehistoric Races of the U.S.," p. 346.

(40) Pueblo Chettro-kettle, Chaco Canyon.

(41) "Geographical and Geological Survey of the Territories," Hayden, 1876, p. 440. Calculations made by Mr. Holmes.

(42) Brinton's "Floridian Peninsula," p. 21. We think, however, this statement requires to be taken with some allowance. Personal liberty seems to have been the birthright of every Indian. ("Mounds of the Mississippi Valley," Carr, p. 24.) The council of the tribe is the real governing body of all people in a tribal state of society. ("Ancient Society," Morgan.) When the war-chief united in his person priestly powers also, he at once became an object of greater interest. This explains why the government of the chiefs among all the Southern Indian tribes appears so much more arbitrary than among the northern tribes. His real power was probably much the same in both cases, but superstition had surrounded his person with a great many formalities. The early explorers, acquainted only with the arbitrary governments of Europe, saw in all this despotic powers

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whereas there might not have been much foundation for this belief.

(43) "Traditions of Decodah," Pidgeon. Carr, "Mounds of the Mississippi Valley," p. 70.

(44) "Indian Migrations," *American Antiquarian*, April, 1883.

(45) Mr. Hale suggests that copper was the gold of the North American Indians, and that the "golden city" simply means a city or town where they knew how to work copper. It is well known that the mound building tribes had such knowledge, at least they knew how to work native copper.

(46) This tradition was first made known by Heckwelder, a missionary among the Delawares, in his "History of the Indian Nations." It is repeated at much greater length, and with additional particulars, in a paper read by Mr. E. G. Squier, before the Historical Society of New York. Mr. Squier has simply translated a genuine Indian record known as the Bark Record. The two authorities here mentioned consider the Delawares as coming from west of the Mississippi. Mr. Hale points out that it was more likely the Upper St. Lawrence--that portion known as the Detroit River--that was the "Great River" of the traditions.

(47) From this word comes Alleghany Mountains and River.

(48) In this connection it is at least interesting to note that

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several authors--Squier, MacLean, and others--have contended, judging from the fortified hills and camps, that the pressure of hostilities on the Mound Builders of the Ohio Valley was from the north-east.

(49) The Chata-muskoki family. (Brinton.)

(50) Hale: *American Antiquarian,* April, 1883.

(51) We are not at all certain but our scholars will shortly come to the conclusion that the Cherokees or Shawnees are quite as likely to be the descendants of the Allegewi as the Natchez.

(52) It is scarcely necessary to caution the reader as to the value of this statement of ancient greatness. The chroniclers of De Soto's expedition had nothing to say about it.

(53) Pickett's "History of Alabama," Vol. II.

(54) Du Pratz: "History of Louisiana," Vol. II.

(55) Stone *metates,* or mills, have so far been found only in Missouri, not far from the Missouri River. As this is such an important implement among the Pueblo tribes, its presence in this locality is significant. (Thomas.)

(56) As the proof seems to be conclusive that the Indians of the south who were encountered by the Europeans first visiting that section were the builders of the mounds of that region, it brings these works down to a date subsequent to the entry of the civilized tribes into Mexico. (Thomas.)

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(57) Some of the pottery from South-eastern Missouri and Arkansas shows a strong resemblance to that of some Pueblo tribes. (Thomas.)

(58) Short's "North Americans of Antiquity," p. 202.

(59) Morgan: "Ancient Society," p. 12.

(60) "Fifth Annual Report Archaeological Institute," p. 85.

(61) Short's "North Americans of Antiquity," p. 458.

(62) Carr: "Mounds of the Mississippi Valley," p. 97.

(63) "Ancient Monuments," p. 14.

END OF CHAPTER XII.**********

The Prehistoric World: or, Vanished Races

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Chapter XIII.

THE NAHUA TRIBES.

Early Spanish discoveries in Mexico--The Nahua tribes defined--Climate of Mexico--The Valley of Anahuac--Ruins at Tezcuco--The hill of Tezcocingo--Ruins at Teotihuacan--Ancient Tulla--Ruins in the province of Queratarо--Casa Grandes in Chihuahua--Ancient remains in Sinaloa--Fortified hill of Quemada--The Pyramid of Cholula--Mr. Bandelier's investigations at Cholula--Fortified hill at Xochicalco--Its probable use--Ruins at Monte Alban--Ancient remains at Mitla--Mr. Bandelier's investigations--Traditions in regard to Mitla--Ruins along the Panuco River--Ruins in Vera Cruz--Pyramid of Papantla--Tusapan--Character of Nahua Ruins.

When the ships of the Spanish admiral came to anchor before the Island of San Salvador, he had indeed discovered a "New World." It was inhabited by a race of people living in a state of

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society from which the inhabitants of Europe had emerged long before the dawn of authentic history. The animal and plant life were also greatly different from any thing with which they were acquainted. The Spaniards little suspected the importance of their discovery. Columbus himself died in the belief that he had simply explored a new route to Asia. A quarter of a century elapsed after the first voyage of Columbus before an expedition coasted along the shores of Mexico. This was the expedition of Juan De Grijalva, in 1518. He gave a glowing description of the country he had seen, which "from the beauty and verdure of its indented shores, and the lovely appearances of its villages, he called 'New Spain.'"

Illustration of Map of Mexico.----------

This was followed, in the year 1519, by the history-making expedition of Cortez. The scene of his first landing was about forty miles south of the present town of Vera Cruz, but to this place they soon removed. At his very first landing-point he learned of the existence of what he was pleased to call a powerful empire, ruled by a most valiant prince. The accounts

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the Indian allies gave him of the power and wealth of this empire inflamed the imagination of Cortez and his followers. This was an age, we must remember that delighted in tales of the marvelous; add to this the further fact that Cortez was not, at the beginning of his expedition, acting with the sanction of his royal master; indeed, his sailing from the island of Cuba was in direct violation of the commands of the governor. It was very necessary for him to impress upon the court of Spain a sense of the importance of his undertaking.

Certain it is that the accounts that have been handed down to us, though read with wonder and admiration, though made the basis on which many writers have constructed most glowing descriptions of the wonders of the barbaric civilization, which they would fain have us believe, rivaled that of "Ormus and of Ind," are to-day seriously questioned by a large and influential portion of the scientific world. We have another point to be considered that is of no little weight, as all candid men must admit that it would influence the opinions the Spaniards would form of the culture of the Indians. As the man of mature years has lost the memory of his childhood, so have the civilized races of men lost, even beyond the reach of tradition, the memory of their barbaric state. The Spaniards were brought face

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to face with a state of society from which the Indo-European folks had emerged many centuries before. They could not be expected to understand it, and hence it is that we find so many contradictory statements in the accounts of the early explorers; so much that modern scholars have no hesitation in rejecting.

The main tribe of the empire which Cortez is said have overthrown is known to us by the name of the Aztecs; but as this name properly denotes but one of many tribes in the same state of development, it is better to use a word which includes all, or nearly all, of the tribes that in olden times had their home in the territory now known as Mexico. Careful comparisons of the various dialects of ancient Mexico have shown that, with the exceptions of some tribes in Vera Cruz, they all belonged to one stock-language; and so they are collectively known as the Nahua tribes.

We wish now to inquire into the culture of this people, to see how much of the strange story that the Spaniards have to tell us has a reasonable foundation. We will state frankly that, though the literature on this subject is of vast proportions, yet it is very far from being a settled field. All accounts of the early explorers of the strange scenes, customs, and manners of the

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inhabitants, when they were first discovered, are so intermixed with self-evident fables, and statements that are undoubtedly exaggerations, that we have a most difficult task before us. We will first examine the antiquities of this section, compare them with those found in more northern regions, and then examine the statements of the early writers as to the customs of the people. We do not propose to do more than to follow after our leaders in thought, and try to make plain the conclusions to which they have arrived. We are not to deal wholly with a prehistoric people, though their origin is unknown. What we desire to do is to clear away the mists of three and a half centuries, and to catch, if possible, a glimpse of what was probably the highest development of prehistoric culture in North America just before the arrival of the Spaniards.

Mexico was surely a land well adapted to the needs of a prehistoric people. Along the coasts the ground is low. This constitutes what is known as the "Hot Country." The greater part of Mexico consists of an elevated table-land, which rises in a succession of plateaus. As we leave the coast region and climb the plateau, we experience changes of climate. If it were level, it would have mainly a tropical climate, but owing to the elevation we have just mentioned, it has mainly a

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temperate climate. The whole plateau region is cut up with mountains. The Sierra Madre, on the west, is the main chain, but numerous cross-ranges occur. The result is, a greater part of Mexico abounds in fertile, easily defended valleys--just such localities as are much sought after by a people in barbaric culture, constantly exposed to the assaults of invading foes.

We may as well pass at once to the valley of Anahuac, the most noted in all the region, and learn of the antiquities of this central section. It is in this valley that the capital of the Mexican Republic is situated. All travelers who have had occasion to describe its scenery have been enthusiastic in its praise. The valley is mountain-girt and lake-dotted, and in area not far different from the State of Rhode Island. On one of the principal lakes was located the Pueblo of Tenochtitlan, the head-quarters of the Aztecs, commonly known as the City of Mexico. When Cortez first stood upon the encircling mountains, and gazed down upon the valley, he saw at his feet one of the most prosperous and powerful pueblos of the New World.

This is not the place to recount the story of its fall.
Our present inquiry is concerned solely with the remains of its prehistoric age. The enthusiastic Spaniards would have us

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believe in a city of Oriental magnificence. We have no illustrations of this pueblo. It was almost completely destroyed by Cortez before its final surrender in August, 1521. It was then rebuilt as the capital city of New Spain. Of course, all traces of its original buildings soon disappeared. What we can learn of its appearance is derived from the accounts of the early writers, which we will examine in their proper place. After having surveyed the entire field of ruins, we will be much better qualified to judge of the vague statements of its former grandeur. A few relics have, indeed, been found buried beneath the surface of the old city. They illustrate the culture of the people, as will be noticed further on.

Directly across the lake from the Pueblo of Mexico was that of Tezcuco, the head-quarters of the second powerful tribe of the Aztec Confederacy. Traces only are recoverable of its former buildings. At the southern end of the modern town were found the foundations of three great pyramids. They were arranged in a line from north to south. Mr. Mayer says of these ruins: "They are about four hundred feet in extent on each side of their base, and are built partly of adobe and partly of large, burned bricks and fragments of pottery." He tells us further that the sides of the pyramids "were covered with fragments of

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idols, clay vessels, and obsidian knives." From other discoveries, it would seem these pyramids were coated with cement. The suggestion is made that on one of these pyramids stood the great temple of Tezcuco, which, an early writer tells us, was ascended by one hundred and seventeen steps.

Illustration of Bas-Relief, Tezcuco.--------

In another part of the town a sculptured block of stone was found, of which this cut is given. "It appears to be the remains of a trough or basin, and the sculpture is neatly executed in relief. I imagine that it was designed to represent a conflict between a serpent and a bird, and you can not fail to remark the cross distinctly carved near the lower right-hand corner of the vessel." Bullock, who traveled in Mexico in 1824, has left a brief description of the ruins of what he calls a palace.
"It must have been a noble building. ... It extended for three hundred feet, forming one side of the great square, and was placed on sloping terraces raised one above the other by small steps. Some of these terraces are still entire and covered with cement. ... From what is known of the extensive foundations of

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this palace, it must have covered some acres of ground."
This last statement is doubtless exaggerated. From what we know of Indian architecture, these ruins were doubtless long, low, and narrow, and placed on one or more sides of a square, perhaps inclosing a court.

About three miles from the town of Tezcuco is a very singular group of ruins. This is the Hill of Tezcocingo. This is very regular in outline, and rises to the height of about six hundred feet. A great amount of work has evidently been bestowed on this hill, and some very far-fetched conclusions have been drawn from it. Probably as notable a piece of work as any was the aqueduct which supplied the hill with water, and this is really one of the most wonderful pieces of aboriginal work with which we are acquainted.

The termination of the aqueduct is represented in our next cut. This is about half-way up the hill, right on the edge of a precipitous descent of some two hundred feet. "It will be observed in the drawing that the rock is smoothed to a perfect level for several yards, around which seats and grooves are carved from the adjacent masses. In the center there is a circular sink, about a yard and a half in diameter and a yard in

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depth, and a square pipe, with a small aperture, led the water from an aqueduct which appears to terminate in this basin. None of the stones have been joined with cement, but the whole was chiseled, from the mountain rock." This has been called "Montezuma's Bath," simply from the custom of naming every wonderful ruin for which no other name was known after that personage; but this was not a bath, but a reservoir of water.

Illustration of Montezuma's Bath.--------

From this circular reservoir the side of the mountain is cut down so as to form a level grade, just as if a railroad had been made. This grade winds around the surface of the hill for about half a mile, when it stretches out across a valley three-quarters of a mile wide, an elevated embankment from sixty to two hundred feet in height. Reaching the second mountain, the graded way commences again, and is extended about half-way around the mountain, where it extends on another embankment across the plains to a range of mountains, from which the water was obtained.

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Illustration of Aqueduct, Tezcocingo.---------

This cut represents the embankment crossing the valley. Along the top of this way was laid the canals to transport the water, made of an exceedingly hard cement of mortar and fragments of pounded brick. It is estimated that nearly, if not quite, as much labor was expended on this aqueduct as on the Croton aqueduct that supplies New York City. This last statement is probably too strong, but, considering that this work was accomplished by a people destitute of iron tools, it is seen to be a most extraordinary work. From what we have already learned, this hill was evidently a very important place. On all sides we meet with evidences that the whole of the hill was covered with artificial works of one kind or another. On the side of the hill opposite this reservoir was another recess bordered by seats cut in living rock, and leading to a perpendicular cliff, on which a calendar is said to have been carved, but was destroyed by the natives in later days.

Traces of a spiral road leading up the summit have been observed. In 1824 Bullock (who, however, is not regarded as a

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very accurate observer) "found the whole mountain had been covered with palaces, temples, baths, hanging-gardens, and so forth." Latrobe, somewhat later, found "fragments of pottery and broken pieces of obsidian knives and arrows; pieces of stucco, shattered terraces, and old walls were thickly dispersed over its whole surface." Mr. Mayer, after speaking of the abundance of broken pottery and Indian arrows, says: "The eminence seems to have been converted from its base to its summit into a pile of terraced gardens."

By one class of writers this hill is regarded as the "suburban residence of the luxurious monarchs of Tezcuco, ... a pleasure garden upon which were expended the revenues of the state and the ingenuity of its artists." Mr. Bancroft has gathered together the details of this charming story, and tells us that the kings of Mexico had a similar pleasure resort on the Hill of Chapultepec, a few miles west of the city. It is sufficient at present to state that an explanation much simpler and more in accord with our latest scientific information can be given. It is more likely that this hill was the seat of a village Indian community. Its location was naturally strong. The water, brought with so much labor from a distance, furnished a supply for the purpose of irrigation, as well as bodily needs.

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The terraced sides show that every foot of ground was utilized, and the ruins of the palaces that Mr. Bullock mentions were the fast-disappearing ruins of their communal buildings. Owing to the cruel raids of the Aztec tribes, this place may have been deserted before the coming of the Spaniards, and thus no mention was made of it.

Illustration of Teotihuacan.----------

Still further to the north, about thirty miles from Mexico, is found another extensive field of ruins, which is called Teotihuacan, meaning "City of the Gods." The principal ruins now standing are the two immense pyramids (which are represented in this cut), which the natives call the "House of the Moon" and the "House of the Sun." We will describe the surroundings first. It is unquestioned but that here was a very extensive settlement in early times. When the Nahua tribes entered Mexico they probably found it inhabited. One very recent writer thinks that "nowhere else in America can you find a more imposing mass of ruins." He estimates that it was "a city upwards of twenty miles in circumference."

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Other writers have also noticed its great extent. According to Thompson, "the ruins cover an area very nearly as large as that of the present City of Mexico, and the streets are as distinctly marked by the ruins of houses." And in another place Mr. Charney tells us "the city was of vast extent; and, without indulging in any stereotyped reflections on the vanity of human greatness, I will say that a more complete effacement is nowhere else to be seen. The whole ground, over a space five or six miles in diameter, is covered with heaps of ruins, which at first view, make no impression, so complete is their dilapidation."

Of this mass of ruins we are told but little, beyond the general assertion that it consists of the ruins of buildings, temples, etc. But very recently M. Charney has uncovered the foundation of one of these houses. He calls it a palace. It was, in all probability, a communal building. It had two wings inclosing a court, and was located on a terraced pyramid. He found, on digging into the terrace in front of the ruins, a great number of sloping walls, covered with cement, containing small compartments, etc. M. Charney can not account for their presence.

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In view of the discoveries further north, we would respectfully suggest that this was, in reality, the lower story of the building, whose flat roof formed the terrace in front of the second story, whose foundation M. Charney so happily discovered. But such suggestions as this are very unsafe to make, and must be supported by further discoveries before they are of any real value.

He found a large number of good-sized rooms, and speaks especially of one hall fifty feet square, in the center of which was six pillars, sloping from the base upwards. They, doubtless, served to support the roof. We regret that we have not been able to see M. Charney's ground plan of this ruin. Of the pyramids themselves we have quite full information. The larger one, that of the sun, is seven hundred and sixty feet square and two hundred and sixteen feet high. It will be seen that these dimensions throw the great mound at Cahokia into the shade. Though the base may not be quite as great, the height of the pyramid is over twice that of the mound. Three terraces are plainly visible. The surface was covered with cement, large slabs of which remain in their place. The moon pyramid is further north.

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It is in all respects like that of the sun, but of smaller dimensions, being one hundred and fifty feet high. In early times these pyramids are said to have supported statues, but, if so, they have long since been thrown down. Their surface and the ground around is thickly strewn with fragments of pottery, obsidian knives, and other small relics. Running south from the House of the Moon, and passing a little to one side of the House of the Sun, are the remains of a wide, paved road. Its width is stated to be one hundred and thirty feet, and its length about two hundred and fifty rods.

This road suddenly expands in front of the Moon, so as to suggest the idea of a Greek cross. Pieces of cement (with which this road was covered) are still visible in places. It is lined with mounds on either side, and they stand so close together as to resemble continuous embankments in some places. Speculations are abundant as to the object of this graded way. Tradition calls it the "Path of the Dead." Small mounds are very numerous over the surface. They may have been for burial purposes, but sculptured stones are found in them, and specimens of hard cement. This group of ruins is regarded as of very great antiquity.

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We can easily see that the growth of the soil formed by the decay and detrition of the stone slabs of the pyramids, temples, and other buildings would be slow, especially as the rainfall is light. But in some localities it is more than three feet thick. In places three separate floors are observed, one over the other, pointing to as many successive occupations of the same sections by men.

About sixty-five miles to the north of Mexico was located Tollan, or Tulla. According to tradition, this was the capital city of the Toltecs, a mysterious people who long preceded the Aztecs. We are told that "extensive ruins remained at the time of the conquest, but very few relics have survived to the present time." M. Charney, whose labors we have referred to at Teotihuacan, succeeded also in making important discoveries here. He tells us that on the site of this ancient capital there is a hill, "about one mile long by half a mile broad, covered with mounds, plateaus, and ruins of all kinds."

He gives us the dimensions of two pyramids, as follows. The first is one hundred and ninety-six feet on each front, and forty-six feet high. The second is one hundred and thirty-one

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feet square, and thirty-one feet high. Both of these pyramids stood on raised foundations, which M. Charney calls esplanades. As no other pyramids are mentioned, we are to suppose these are the two principal ones. Perhaps they are also pyramids of the sun and moon. Our chief interest is concerned with the remains of the habitations he discovered here. He says: "I set the men to work at one of the many mounds upon the ridge, and soon found that I had hit upon a group of habitations." A general idea of this group of buildings is given in this passage: "The dwellings were united together in groups, and erected on isolated mounds, one in the middle, the others around about, the whole forming a sort of honey-comb, with its cells placed at different elevations."

We can not help being struck with the general resemblance of the descriptions here given and that of the ruins in the vicinity of the River Gila. The general tendency is seen to gather together in clusters, with, probably, the most important house in the center. As to the materials used in this building, we are told "they used clay and mud for the inside of the walls, cement to coat them, dressed stone and brick for casings, bricks and stone for stairways, bricks for pilasters, and wood for roofing the edifice. The houses bad flat roofs, consisting of timbers coated

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with cement. Of such timbers we find vast quantities."

Of the arrangements of the rooms, he tells us, "The apartments that have been brought to light comprise a number of chambers, big and little, placed at different heights. We shall have no clear idea of the relation of these different chambers to one another, or of the mode of access to them through the labyrinthine passages and the numerous stairways, until the whole edifice has been unearthed."

This was not the only building he discovered. On digging into a mound supposed to be the support of a temple, he discovered it was the ruined foundation of a still grander house. He says, "It is much larger than the other one, stands on a pyramid, and has two wings inclosing a courtyard. The walls are thicker than those of the first habitation, and more strongly built.
The apartments, too, are larger, though arranged in a similar fashion." Elsewhere he tells us that this building contained at least forty-three apartments, large and small. We presume very few will now question but what the buildings he here describes are ruined communal buildings, much like the structures in Arizona.

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But perhaps the most interesting result of his labors was the proof that these ruins were certainly inhabited after the conquest--for how long a time we can not tell. This is shown by fragments of bones and other articles found in the refuse heaps. The bones were of such animals as the horse, swine, sheep, oxen, etc.--animals introduced into this country by the Spaniards. The fragments of pottery include specimens plainly not of Indian manufacture, such as fragments of porcelain, and that variety of glazed ware known as delf, and lastly, the neck of a glass bottle. It may be said that these fragments might have been left by a band of Spaniards who occupied the ruins in the early days of the conquest, perhaps long after the Indian owners had left. This is of course possible, but it is just as reasonable to suppose the fragments were left by descendants of the original builders.

Northward from Tulla is a small province, marked on the map Queratarо. From the accounts at our disposal, which are very brief, we gather that this whole section is a tableland split up by ravines of great depths and precipitous sides; consequently one abounding in easily defended positions. It was found that all the projecting points, naturally strong, were rendered still stronger by the presence of ditches, walls, and embankments.

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Three groups of ruins are mentioned especially, and their location is marked on the map. At Pueblito there was, at an early day, plainly to be seen, the foundation of a large, rectangular building. The walls were built of stone laid in clay.

At Canoas, in the northern part of the State, there is a steep and strongly fortified bill, but particulars in regard to it are very meager. "There are, in all, forty-five defensive works on the hill, including a wall about forty feet in height, and a rectangular platform with an area of five thousand square feet." Ranas, the most northern one of the three sites mentioned, is regarded as the center of population in early times. "A small lake and a perennial spring are supposed to have been the attractions of this locality in the eyes of the people. On all the hills about are still seen vestiges of their monuments."

If we look at the map we will notice that we have gone but a little ways north of the valley of Anahuac. Yet, with the exception of the Gulf-coast, there are but few striking aboriginal ruins in Northern Mexico. At the time of the conquest the whole northern section was the home of tribes not generally

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considered to be as far advanced as those who lived in the section we have already described, and in regions further south. Yet it is certainly hard to draw the line between the culture of the two people. We are told that, these Northern tribes though styled "dogs," and "barbarians," by the Southern tribes, were yet "tillers of the soil, and lived under systematic forms of government, although not apparently much given to the arts of agriculture and sculpture."

This point is of considerable interest to us, theoretically; for it is a question from whence came the various Nahua tribes. We would naturally think, if they came from the North, we ought to find evidence of their former presence in the various Northern States of Mexico. We must remember, however, that a migrating people are not apt to leave monuments until they reach the end of their migration. Neither has the territory been as carefully explored as it should be. What accounts we can obtain of the remains in this section are certainly very meager. But one place in Sonora do ruins occur, and they have never been examined by competent personages. In Chihuahua occur ruins, evidently the works of the same people as built the separate houses to the west of the Rio Grande, in New Mexico.

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These ruins have received the same name as those on the Rio Gila--that is, "Casas Grandes," meaning "Great House." This cut represents a view of these ruins. The river valley is here about two miles wide, and is said to be very fertile. Mr. Bartlett thinks there is no richer valley to be found from Texas to California. This valley was once the seat of a considerable population. Mounds are here found in considerable numbers. Over two thousand are estimated as occurring in a section of country sixty miles long by thirty in width. We wish we knew more about the mounds. They are said to contain pottery, stone axes, and other implements. It is possible, then, that these mounds are ruins of separate houses. At any rate, such are the only kind of ruins noticed in the upper part of this same valley by Mr. Bandelier.

Illustration of Casas Grandes.----------

The ruins in question are undoubtedly those of a rich and prosperous pueblo. They are so placed as to command a very extensive view. The river valley is cut through a plain, and has

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precipitous sides about twenty-five feet in height. The ruins in question are found partly in the bottoms and partly on the upper and more sterile plateau. The walls were made of adobe, and in consequence of their long exposure to the elements are very far gone in ruins; so much so that Mr. Bartlett was unable to make out the plan. But enough was seen to show that this was a pueblo much like the structure already described. They properly belong to the Arizona group of ruins.

We are told they face the cardinal points, and consist of fallen and erect walls. The portions still standing are from fifty to sixty feet high, or rather were that height in 1851. It is doubtful whether any thing more than a mound of adobe mud now marks the spot. The walls were highest in the center of the mass. At the distance of a few miles was a hill said to be fortified. But the descriptions of it are conflicting.
Some represent it as crowned with a stone-built fortress two or three stories high. Others more reasonable, represent it as the site of a watch-tower, or sentry station, and that at regular intervals on the slope of the hill are lines of stone, with heaps of loose stones at their extremities. Probably the same fate overtook the tribes of this valley as did the sedentary tribes of the North. They would not willingly abandon

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a place so well suited to their needs. The presence of an invading foe, cruel and vindictive, alone accounts for this group of ruins.

In Sinaloa we have no very definite account of ruins. However, Mr. Bandelier says, the existence of ancient villages in that section is certain, and that from "Sinaloa there are ample evidences of a continuous flow Southward." There are no ruins worth mentioning in any of the other States, excepting Zacatecas, where we find a ruin of great interest. This is at Quemada, in the southern part of the State. The name is taken from that of a farm in the near neighborhood. The ruins are situated on the top of a hill, which is not only naturally strong, but the approaches to it are fortified. The hill ascends from the plain in a gentle slope for several hundred yards, it then rises quite precipitously for about a hundred and fifty feet. The total height of the hill above the plain is probably not far from eight hundred feet.

At all points where the approach to the top of the hill is not steep enough to form a protection of itself, the brow is guarded by walls of stone. This is especially true of the northern end of the hill. One peculiar feature of this place is the traces of

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ancient roads, which can still be clearly distinguished crossing each other at various angles on the slope we have mentioned. They can be followed for miles, and are described as being slightly raised and paved with rough stones. In places on the slope, their sides are protected by embankments.

Considerable speculations have been indulged in as to the purposes for which these roads were used. It has been suggested that they were the streets of an ancient city which must once have existed on the plains; and that the fortified hill, with the ruins on its summit, was the citadel, the residence of their rulers, and the location of their temples. But we think a more reasonable view is that all of the city that ever stood in that neighborhood was on the hill summit, and that these streets were for religious purposes, reminding us in this respect of the graded ways and traces of paved streets sometimes met with in the Mississippi Valley. In proof of this view, it is said that many of them, after being followed for a long distance, are found to terminate in a heap of stones, which are evidently the ruins of a regular pyramid. In opposition to both of these views, it has been suggested that the surrounding plain was low and marshy, and that the object of these causeways was to secure a dry passage, which explanation is certainly very reasonable.

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Illustration of Quemada.----------

Of the top of the hill, it may be sufficient to state that it is of irregular shape, half a mile in length from north to south, and of varying width, but on an average one thousand feet wide. The approach to the top of the hill was strongly guarded. Although buildings were observed covering the whole top of the hill, yet they were in two principal groups. This cut, though but one of many, will give us very good ideas of all the ruins. It is seen to be an inclosure. It is on a small scale. It was one hundred and fifty feet square. We notice terraces on three sides. These terraces are three feet high by twelve wide, and in the center of each side are steps by which to descend to the square. Each terrace is backed by a wall, portions of which are seen in the engraving. These walls are twenty feet high by eight or nine in thickness. The openings seen in the wall are not properly doors, as they extend to the top of the wall.

This court, encompassed by terraces, is a peculiar feature. It is different from any thing we know of, either north or

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south. Courts, surrounded by buildings located on terraces, are common enough, but all accounts of these ruins say nothing of buildings. We remember the inclosures that surrounded the houses clustered in groups on the Rio Gila. We think this comes near to being a development of the same idea. The low walls of the former inclosure are here quite pretentious pieces of masonry. In some cases two or more of these inclosed courts are joined by openings.

The opening in the wall on the right of the engraving leads into a perfect inclosed square of two hundred feet. In one case a range of pillars was noticed parallel with the walls, and distant twenty-three feet. These are supposed to have supported the roof of the portico, and houses of a rude description might have been ranged along under this roof, which has since completely vanished. Back of this square, but not very well shown on the drawing, rises a precipitous hill. A pyramid is placed in the center of the side towards the hill. It is only nineteen feet high, but is divided into five stages or stories.

This pyramid will serve as an example of numerous other pyramids scattered over the summit of the hill. They are made of stone.

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The largest one, whose dimensions are given, is fifty feet square, and the same in height. In front of the pyramid, and in the center of the square, are the remains of an altar. In view of the altar and pyramid, within the inclosed square, we may suppose this to have been dedicated to their religion. As if to confirm this belief, is the statement that on the hill to the back of the pyramid are numerous tiers of seats, either broken in the rock or built of rough stone. The people seated on them would be conveniently located as regards both sight and hearing of what transpired there.

From an Indian's point of view, this hill was very strongly fortified. It would be almost impossible for an enemy to capture the settlement on its summit. The surrounding country was probably fertile, and a large body of Indians could have lodged within the fortified inclosures. It has some peculiar features, which have been pointed out. There is now no water on the hill, but traces of what is supposed to be an aqueduct are observed, as well as several tanks, and at one place a well. There is not an appearance of great antiquity about these ruins, and yet native traditions are silent in regard to them, and but one of the early writers refers to them, and he had not seen them.

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West of the central basin the remains are more numerous than to the north, but they are not very striking, and it is scarcely worth our while to stop and examine them. About sixty miles in a south-easterly direction from Mexico is the modern town of Cholula. This has grown at the expense of the ancient city of Cholula, grouped around the famous pyramid of that name. This was the Mexican "Tower of Babel." The traditions in regard to it smack so strongly of outside influence that but little reliance can be placed on them. They are evidently a mixture of native traditions and Biblical stories. Like Teotihuacan and Tulla, this is regarded as a relic of Toltec times. This is but another way of saying that it is older in time than the majority of ruins.

At the time of Cortez's march to Mexico Cholula was a very important place. In his dispatches he says: "The great city of Cholula is situated in a plain, and his twenty thousand householders in the body of the city, besides as many more in the suburbs." He further states that he himself counted the towers of more than four hundred "idol temples."

We must remember that this is a Spanish account, and therefore exaggerated. Still, after making due allowance for the same, it

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would remain an important aboriginal settlement. We have no reliable data of the population at the time of the conquest. From documentary evidence Mr. Bandelier has shown that while Cholula was certainly a populous Indian pueblo, it is a misnomer to call it a city. It was a group of six distinct clusters, gathered around a common market. He estimates that its population may possibly have been thirty thousand. All explorers have mentioned the fertility of the plain in the midst of which this monument is found.

But this plain is almost destitute of easily defended positions; which fact has an important bearing on the purpose for which the great mound was erected. At a distance it presents all the appearance of a natural hill. The casual observer would not believe it was entirely the work of men. "In close proximity," says Mr. Bandelier, "the mound presents the appearance of an oblong conical hill, resting on projecting platforms of unequal length. Overgrown as it is with verdure and partly by trees, and with a fine paved road leading to the summit, it looks strikingly like a natural hill, along whose slopes the washing of the rains and slides have laid bare bold bluffs, and into whose bulk clefts and rents have occasionally penetrated."

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Illustration of Pyramid of Cholula.----------

This celebrated mound or pyramid has lately been the subject of a very careful study by Mr. Bandelier. The illustration we present gives us a very good idea of the present appearance of the mound. The mass is probably solid throughout, and if there is a natural hill in its center, it must be a very small one. The height of the central higher mass is very nearly two hundred feet. The present appearance of the summit is entirely due to the Spaniards. At the time of the conquest the summit was convex; the friars had it leveled in order to plant a cross. The area of this upper platform is not far from two-thirds of an acre. It is now paved and surrounded by a wall.

In the illustration we detect the appearance of terraces. These are level areas, not all of the same height; neither do they extend entirely around the mound. In fact, the present appearance indicates three projections, or aprons, surrounding and supporting a conical hill, and separated from each other by wide depressions. This central mound, with its three projections, rests upon a very extensive platform, which was

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probably cross-shaped. This platform seems to have been about twelve feet high, and covered an area of at least sixty acres.

The object for which this great pile was erected is a topic that has exercised the thoughts of many scholars. Some have supposed it was a burial mound. Some years ago, while in constructing a road from Pueblo to Mexico, the first terrace or story was slightly dug into, and disclosed a chamber, which contained two skeletons, two idols, and a collection of pottery." Yet, before deciding it to be a burial mound, it will be necessary to show the presence of tombs near the center.

We have referred to the results of Mr. Bandelier's explorations. He made a very thorough study of this great pyramid--more complete than any that had hitherto been made--and his results should have corresponding weight. He finds that the materials of which the adobe brick is composed are exactly the same as that of the surrounding plain. This does away with one old tradition, that the bricks were manufactured at a distance, and brought several leagues to their destination by a long line of men, who handed them along singly from one to another.

From the manner in which the bricks are laid, and from their

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variation in size, he concludes that the structure was not all erected at one time, but that the mound is the accumulation of successive periods of labor. From this it follows that it was built to serve some purpose of public utility, and not as a token of respect for some individual. Wherever found, these great works show the same evidence of not being all completed at once. This was true of the North; we shall also find it true of the South. Charney noticed the same thing in the house at Tulla. Nothing is more natural than that an Indian community would increase their buildings as the tribe increased.

Mr. Bandelier's final conclusion in regard to the purpose of its erection is one of great interest, but not at all surprising.
"If we imagine the plateaus and aprons around it covered with houses, possibly of large size, like those of Uxmal and Palenque, or on a scale intermediate between them and the communal dwellings of Pecos and many other places in New Mexico, we have then, on the mound of Cholula, as it originally was, room for a large aboriginal population.
The structure, accordingly, presents itself as the base of an artificially elevated, and therefore, according to Indian military art, a fortified, pueblo."

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But this does not remove from it the air of mystery. Long-fallen indeed are the communal walls. It was not simply a few years ago that these pueblo-crowned terraces were reared. The date of its erection is hid in the dim traditions of the past.

The traditions of the Nahua tribes, who came at a far later date, speak of it as even then standing on the plain.

Scattered over the plain are other ruins of a somewhat different nature from the general ruins in the valley. These may be the ruins of works erected by the same class of people as built the mounds. Especially is this thought to be true of ruins found on the slopes of neighboring volcanoes.

To the south-west of Cholula are the ruins of Xochicalco, which, by some, are pronounced to be the finest in Mexico. There are many points of resemblance between this ruin and Tezcocingo. The meaning of the word is "Hill of Flowers." The hill is a very regular, conical one, with a base nearly three miles in circumference, and rises to a height above the plain of nearly four hundred feet. The hill is considered to be entirely a natural formation; but it probably owes some of its regular appearance to the work of man. Around the base of the hill had been dug a wide and deep ditch. When Mr. Taylor visited the place, the side of this moat had fallen in, in many places, and

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in some quite filled up--but it was still distinctly visible. The whole surface of this hill was laid off into terraces.

Five of these terraces, paved with blocks of stone laid in mortar, and supported by perpendicular walls of the same material, extend, in oval form, entirely around the whole circumference of the hill, one above the other. From the accumulation of rubbish, these terraces are not easy to detect in all places. Probably, at one time, there was some easy means of access from one terrace to the other, but they have disappeared--so that now the explorer has to scramble up intervening slopes of the terraces as best he can. It is probable that defensive works once protected these slopes.

Mr. Mayer says: "At regular intervals, as if to buttress these terraces, there are remains of bulwarks shaped like the bastions of a fortification." "Defense seems to have been the one object aimed at by the builders." The top of the hill is leveled off. Some writers represent that a wall of stone was run along the edge of the summit but others think that the whole top of the hill had been excavated, so as to form a sunken area, leaving a parapet along the edge. This summit-platform measured

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two hundred and eighty-five feet by three hundred and twenty-eight feet. Within this area were found several mounds and heaps of stones. The probabilities are that it was once thickly covered with ruins. In the center of this sunken area are the remains of the lower story of a pyramid, which the inhabitants in the vicinity affirm to have been once five stories high.

To judge from the ruins still standing, this must have formed one of the most magnificent works of aboriginal skill with which we are acquainted. This cut gives a general idea of the ruins from the west. We presume the broken appearance presented by this side is in consequence of the removal of stones by planters in the vicinity for their own use. It seems they have used this monument as a stone-quarry. This pyramid, or the first story of it, was nearly square--its dimensions being sixty-four feet by fifty-eight.

Illustration of Xochicalco.----------

The next cut is an enlarged drawing of the north-west corner

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seen in the first drawing. Notice the grotesque ornamentations on it. The ornaments are not stucco-work, but are sculptured in bas-relief. As one figure sometimes covers parts of two stones, it is plain they must have been sculptured after being put in position. The height of this front is nearly fifteen feet.

In the left-hand corner of this sculpture will be perceived the bead of a monstrous beast with open jaws and protruding tongue. This figure is constantly repeated in various parts of the facade. Some have supposed it to be a crocodile. The rabbit is another figure that constantly reappears in portions of the wall.

Illustration of Enlarged View of Ruins at Xochicalco.----

We can scarcely realize the labor involved in the construction of this pyramid and the terraced slope. Some idea may be formed of the immense labor with which this building was constructed from measurements made of several of the masses of porphyry that compose it. One stone was nearly eight feet long by three broad. The one with the rabbit on is five feet by two and a half.

When it is recollected that these materials were not found in

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the neighborhood, but were brought from a great distance, and borne up a hill more than three hundred feet high, we can not fail to be struck with the industry, toil, and ingenuity of the builders, especially as the use of beasts of burden was, at the time, unknown in Mexico. Nor was this edifice, on the summit, the only portion of the architect's labor. Huge rocks were brought to form the walls supporting the terraces that surrounded the hill, a league in circumference, and the whole of that immense mass was eased in stone. Beyond these terraces, again, there was still another immense task in the ditch, of even greater extent, which had to be dug and regularly embanked.

Now, what was the object of all this labor? This must have been the center of a large settlement. It seems that the surrounding hills--or, at least, some of them--were also terraced. Mr. Taylor says: "On the neighboring hills we could discern traces of more terraced roads of the same kind. There must be many miles of them still remaining." In a Mexican book we are told "adjoining this hill is another higher one, also covered with terraces of stone-work in the form of steps. A causeway of large marble flags led to the top, where there are still some excavations, and among them a mound of large size." Mr. Latrobe,

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from the top of the "Hill of Flowers," saw that it was the center towards which converged several roads, which could be traced over the plain. The road he examined was "about eight feet in breadth, composed of large stones tightly wedged together." It is extremely probable that in Xochicalco we have another instance of a strongly fortified hill, on the top of which was their pueblo, arranged around their teocalli, or temple.

In our description of this ruin we must not forget to mention some curious underground chambers, excavated in the hill itself. On the northern slope, near the foot, is the entrance to two galleries, one of which terminated at the distance of eighty feet. The second gallery is cut in solid limestone, about nine feet square, and has several branches. The floors are paved with brick-shaped blocks of stone. The walls are also, in many places, supported by masonry, and both pavement, walls, and ceilings are covered with lime-cement, which retains its polish, and shows traces, in some parts, of having had originally a coating of red ocher. The principal gallery, after a few turns, finally terminated, or appeared to, in a large room eighty feet long, in which two pillars were left to support the roof. In one corner of this room there was a dome-shaped excavation in the

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roof, from the apex of which a round hole about ten inches in diameter extended vertically upwards.

The natives say there are still other excavations. We have seen no good explanation of the uses of these excavations. The labor in constructing them must have been very great. In the province of Oaxaca we shall find several groups of ruins. In all probability those known and described are not more numerous than those unknown. The class of ruins represented by Quemada, Tezcocingo, and Xochicalco (that is, a hill strongly fortified, with traces of a settlement on the summit, mounds, foundations of communal houses, and pyramidal structures) are also to be found here. At Quiotepec we have very meager accounts of such a ruin. The hill is over two miles in circumference and a thousand feet high. A running stream has rendered one side of the hill very steep and precipitous, but the other sides are terraced.

One of the terrace-walls at the summit is about three hundred and twenty feet long, sixty feet high, and five and a half feet thick. On the summit of the hill are found great numbers of mounds, foundations of small buildings, as well as ruins of statelier buildings, called by some palaces, but which were probably regular communal structures; also the pyramid base of a

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temple. At different points near the summit of the hill are three tanks or reservoirs, one of which is sixty feet long, twenty-four feet wide, and six feet deep, with traces of steps leading down into it.

Still further south, near the center of the state at Monte Alban, is a more extensive group of ruins on the same general plan as the one just described. In this case, from the banks of a stream, there rises a range of high hills with precipitous sides. At their summit is an irregular plateau half a mile long by nearly a quarter of a mile wide. M. Charney states that a portion of this plateau is artificial. He represents the whole surface as literally covered with blocks of stone--some sculptured--the ruined foundations of buildings, terraces, and so forth. He regards it as one of the most precious remains of aboriginal work, and this is the view of Mr. Bandelier also. It is to be regretted that we have not more details of such interesting ruins. We, however, would learn but little new from them. One ruin is spoken of as an immense square court, inclosed by four long mounds, having a slight space between them at the ends. It is extremely probable that these mounds once supported buildings.

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The most celebrated ruin in Oaxaca is Mitla. These are the first ruins we have met that, by their strange architecture and peculiar ornamentation, suggest some different race as their builders. The present surroundings are of the gloomiest character. The country is barren and desert. The valley in which the ruins are located is high and narrow, but surrounded by bleak hills. The soil is dry and sandy, and almost devoid of vegetation. The cold winds, blowing almost constantly, sweep before them great clouds of sand. A small stream flows through this dreary waste, which, during the rainy season, is a raging torrent. "No birds sing, or flowers bloom," around these old ruins. Appropriately enough, tradition speaks of this as the "Place of Sadness," or "Dwelling of the Dead." As to the extent of territory covered by the ruins, we have not been able to learn further than the general statement that at the time of the conquest they covered an immense area.

Illustration of Wall at Mitla.----------

Mr. Bandelier found, besides two artificial hills, traces of thirty-nine distinct edifices, and, as he thinks these are all

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the buildings that ever stood there, it is manifest that this was not a city in our sense of the word. Two or three of the buildings were constructed of adobe, plastered, and painted red. The others were built of stone. Of these latter the greater part stands upon the ground, but a few are built upon elevated terraces, composed of stone and earth heaped together and faced with stone. In one group of four buildings the terraced foundation contained a basement--in one case, at least--in the form of a cross. The purpose of this cellar or basement left in the artificial foundation is unknown. Some think they were used for burial purposes but it is more likely they were general store-rooms. The arrangement of these buildings was the same as elsewhere. That is, so placed as to inclose a court. This illustration shows us the method of constructing the walls of the building. We notice two distinct parts. The inner part is built of broken stones laid in tolerably regular courses in clay. There was no mortar used. This inner core is much the same sort of work as the masonry in the pueblos of Arizona. A facing was put on over this inner core, which served both for ornament and for strength. This illustration is a corner of one of these buildings, and gives us in excellent idea of the peculiar ornamentation employed at Mitla. Mr. Bancroft gives us a clear idea of how this facing was put on: "First, a double tier of

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very large blocks are placed as a base along the surface of the supporting mound, projecting two or three feet from the line of the wall, the stones of the upper tier sloping inward. On this base is erected a kind of framework of large, hewn blocks with perfectly plain, unsculptured fronts, which divide the surface of the wall into oblong panels of different dimensions."

Illustration of Ornamentation at Mitla.----------

It would, then, seem as if the panels were thickly coated with clay. Into this clay was then driven small, smoothed blocks of wedge-shaped stones, in such a way as to cover them with geometrical ornamentations, which, though not absolutely symmetrical, present a striking and agreeable appearance. Each section of the wall presents a different pattern, but this difference is so slight that the general effect is harmonious. This mosaic ornamentation is found in some of the inner facings of the walls as well. In general, however, the walls on the inside were covered with mortar and painted.

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Illustration of Hall at Mitla.-------

Some of the blocks of stone forming the basement, the framework of the panels, and the lintels of the door are of great size, and the lintels were in some cases sculptured. One of the largest rooms at Mitla is represented in the preceding cut. The peculiar feature about it is the range of columns seen in the drawing. The inner plastering has fallen, exposing the rough wall. The columns are simple stone pillars, having neither chapter nor base. It is generally supposed that these pillars supported the roof. As in the pueblo buildings to the north, as well as the Toltec house at Tulla, the roof was probably formed of the trunks of small-sized trees laid close together and covered with clay and cement.

We have as yet not seen any thing in these ruins sufficiently striking to justify the somewhat extravagant assertion made about them. The ornamentation is indeed peculiar and tasteful, but aside from that, we see no reason to speak of them as magnificent structures. The buildings are low and narrow; the rooms are small, dark, and illy ventilated. "Light could only have been admitted from one side, and the apertures for this

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purpose were neither lofty nor broad." Mr. Bandelier fittingly characterizes the ruins as the "barbaric effort of a barbarous people." Those scholars who think we have in Mexico the ruins of a highly civilized, powerful empire, regard these ruins as in some way set aside for mourning purposes of the royal family. "According to tradition," says Mayer, "They were ... intended as the places of sepulture for their princes. At the death of members of the royal family, their bodies were entombed in the vaults beneath; and the sovereign and his relatives retired to mourn over the departed scion in the chambers above these solemn abodes, screened by dark and silent groves from the public eye." Another tradition devotes the edifices to a sect of priests, whose duty it was to live in perfect seclusion, and offer expiatory sacrifices for the royal dead who reposed in the vaults beneath.

With all due respect to traditions, we think a much more reasonable explanation can be given. One reason why Mitla has been regarded as such an important place, is because it has been assumed that there were no other ruins like it, especially in Mexico. This, according to Mr. Bandelier, is a mistake. He examined one or two quite similar ruins in the near vicinity, and at another place he found a group of ruins in every way

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worthy of being compared to Mitla, but he was not able to examine them. So we must either decide there were a number of these "Sepulchral Palaces," or else adopt some simpler explanation. But still stronger is the fact, that at the time of the conquest, Mitla was an inhabited pueblo. We have the account of a monk who visited it in 1533. He mentions in particular the ornamentation of the walls, the huge doorways, and the hall with the pillars. It is extremely probable that if it was devoted to any such purpose, some mention would have been made of it. We think Mr. Bandelier is right when he concludes that these structures are communal buildings, but little different from others.

As for the other ruins in Oaxaca, we will not stop longer to examine them. At Guingola, in the southern part of the State, was found a ruined settlement. The principal ruins were located on the summit of a fortified hill, which, from a brief description, must have been much like those we have already described.

We will now turn our attention to the Gulf-coast. The whole coast region abounds in great numbers of ruins. It is in this section, however, that tribes of people belonging to a different

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family than the Nahua tribes, were living at no very distant time in the past. So it is not doubted but that many of these ruined structures, perhaps the majority of them, were the works of their hand. When Cortez landed on the coast, in the neighborhood of Vera Cruz, he was received by the Totonacas. These were a Nahua tribe, but both to the north and south of them were Maya tribes. We will, however, describe the ruins in the present State of Vera Cruz under one head.

We notice, on the coast, the Gulf of Tampico, into which pours the river Panuco. From an antiquarian point of view, this is a most interesting locality. It was here that a feeble remnant of De Soto's disastrous expedition found a refuge in 1543. And it was here that, at a far earlier period, according to the dim, uncertain light of tradition, the ancestors of some of the civilized nations of Mexico made their first appearance; of this, more hereafter. Certain it is that, commencing at this river, we find ourselves in a land of ruins.

It is to be regretted, however, that our information is not definite in regard to them. We are told, in general terms, of a great field of ruins, but in the absence of cuts, can scarcely give a clear description of them. On the northern bank of the

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Panuco, Mr. Norman found at one place the ground "strewn with hewn blocks of stone and fragments of pottery and obsidian." They were found over an area of several square miles. Many of the blocks of stone were ornamented with sculpture. They imply the presence, in former times, of some kind of buildings. We can not form an opinion as to the number, style, etc. Mr. Norman regards them as the ruins of a great city, the site of which is now covered with a heavy forest.

Amongst these ruins are about twenty mounds, both circular and square, from six to twenty-five feet in height. Some authorities think that the Mound Builders went by water from near the mouth of the Mississippi to this region. To such as place any real reliance on this theory, these mounds are full of interest. But some details of construction would seem to indicate a different people as their builders than those who reared mounds in the Gulf States of the Mississippi Valley. The main body of the mound is earth, but they are faced with hewn blocks of sandstone, eighteen inches square and six inches thick. Although one of the mounds is quite large, covering two acres, yet in but one instance was a terraced arrangement noticed. As a general thing, the facing of stone had fallen to the ground, and some of the smaller mounds had caved in; showing, perhaps, that

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they were used as burial mounds. In other cases the mounds had entirely disappeared, leaving the stone facing on the surface. This may account for some of the stones scattered over the surface. A few miles away there is another group of circular mounds.

Across the river in Vera Cruz, from very slight mention, we gather that, substantially, the same kind of ruins occur. At Chacuaco the ruins are said to cover three square leagues--but we have no further account of them than that. Small relics of aboriginal art are said to be common, and mention is made of mounds. The antiquities of Vera Cruz are a topic about which it is very difficult to form correct ideas. It will he noticed that it presents a long stretch of country to the Gulf. The land near the coast is low, and very unhealthy. About thirty miles from the coast we strike the slope of the mountains bounding the great interior plateau. This section is fertile and healthy, and was, evidently, thickly settled in early times. We must remember that it is always in a mountainous section of country that a people make their last stand against an invading foe. It was in these mountain chains where the Maya tribes made their last stand against the invading Nahua tribes, and even this line was pierced through by the Tonacas.

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It is not strange, then, to find abundant evidence of former occupation in all this section of country. One thing in its favor was the number of easily defended positions. The country is cut up by deep ravines. The early inhabitants used all the land that was at all available for agricultural purposes.
On steep slopes they ran terraces to prevent the soil from washing. In the smaller ravines they located great numbers of water-tanks, from which, in the dry season, they procured water to irrigate their land. Of this section, we are told, "there is hardly a foot of ground in the whole State of Vera Cruz in which, by excavation, either a broken obsidian knife, or a broken piece of pottery, is not found. The whole country is intersected with parallel lines of stones, which were intended, during the heavy showers of the rainy season, to keep the earth from washing away. The number of these lines of stones shows clearly that even the poorest land, which nobody in our day would cultivate, was put under requisition by them."

Illustration of Papantla.----------

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They no less conclusively show that a considerable body of people had here been pressed by foreign invasion into a small, contracted space. It is useless to attempt a more particular description of these ruins. In the absence of cuts, the description would only prove tiresome. Pyramids, both with and without buildings on their summits, are comparatively frequent. As they would be noticed where other ruins would be overlooked, we have some cuts of the more remarkable ones. The preceding cut is the pyramid at Papantla.

The base is ninety feet square, and the pyramid has seven stories, as seen in the engraving. Only the last one contains apartments; with this exception, the pyramid is solid. Stairways in front lead up to the top. Mr. Mayer says "there is no doubt, from the mass of ruins spread over the plain, that the city was more than a mile and a half in circuit." But we have no further description of them. Other localities with pyramids and ruins are known. At Tusapan occurs this ruin, which may be taken as a type of all the pyramids in this region. This was the only building remaining standing at Tusapan; but, from the ruins lying about, this is not supposed to have been the grandest structure there.

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Illustration of Tusapan.----------

This will complete what we have to say of the ruins in territory occupied by the Nahua tribes. Other remains of their handiwork we will examine when we treat of their customs and manners. We will now turn our attention to the ruins in the territory of the Mayas. As the culture of these two people is so similar, we will devote but one chapter to the two. Comparison is the great means we have of fixing in the mind points we wish to keep. We have to admit that the treatment of the Nahua ruins is not very satisfactory; but it is difficult to obtain accurate information in regard to them. We think what resemblance can be traced, is more in the direction of the Pueblo tribes than of the Mound Builders. The first ruin found in Mexico, Casa Grandes, in Chihuahua, is evidently but another station of Pueblo tribes.

The fortified hill at Quemada is apparently but a further development of the clustering houses with the little inclosures noticed on the Gila. Mounds are, indeed, mentioned in a number of localities, but they seem to be more nearly related to the

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terraced foundation of buildings observed in Arizona than to the mounds of the Mississippi Valley. Surely as striking a ruin as any is at Mitla, but Mr. Bandelier does not hesitate to compare it with some in the Pueblo country. Now, it is very unsafe and very unsatisfactory to trace resemblances of this kind, and we do not assign any especial value to them. But it only shows that, so far as this method is of use, it points to a closer connection with the Pueblo tribes than with the Mound Builders.

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(11) "Gratacap, in *American Antiquarian,* October, 1883,

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p. 310.

(12) "Native Races," Vol. II, pp. 168-173.

(13) As to this hill, Mr. Bandelier remarks: "As a salient and striking object, and on account of the freshwater springs, Chapultepec was worshiped, but I find no trace among older authors of any settlement there--still less of a Summer palace--at the time of the conquest." "Report of an Archaeological Tour in Mexico," p. 73.

(14) Charney in *North American Review*, September, 1880, p. 190.

(15) "Recollections of Mexico," p. 140.

(16) We have several times remarked that it is not safe to judge prehistoric population by the amount of ruins. "Indians never rebuild on ruins or repair them."

(17) Bancroft: "Native Races," Vol. IV., p. 537.

(18) Bancroft: "Native Races," Vol. IV, p. 547.

(19) The ceilings in the pueblos of Arizona were often made of poles covered with cement. See Chapter XI.

(20) Bancroft's "Native Races," Vol. IV, p. 550.

(21) Bandelier: "Fifth Annual Report Arch. Inst.," p. 86.

(22) Bancroft's "Native Faces," Vol. IV, p. 610.

(23) Bancroft's "Native Races," Vol. IV, p. 613.

(24) "Fifth Annual Report," p. 86.

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(25) Bancroft's "Native Races," Vol. IV, p. 581. These dimensions are different in different accounts, as may be seen by consulting Mr. Bancroft's work.

(26) *Lyons's Journal.* From Mayer's "Mexico As It Was," p. 243.

(27) There is something of a similarity between these ruins and those of the coast tribes of Peru.

(28) Another authority states that it is thirty feet square and thirty feet high. Bancroft: "Native Races," Vol. IV, p. 587, note.

(29) As seen in the Drawing. Mr. Lyons states there are seven stories.

(30) This was Clavigaro. Mayer's "Mexico As It Was," p. 245.

(31) Thompson's "Recollections of Mexico," p. 29.

(32) "An Archaeological Tour in Mexico," p. 163.

(33) The altitude varies according to the side where the measurement is taken. The average height is about one hundred and seventy feet.

(34) To be described hereafter.

(35) See Chapter XI.

(36) Different explorers give different figures.

(37) Taylor's "Anahuac," p. 184.

(38) "Mexico As It Was," p. 180.

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(39) Mayer: "Mexico As It Was," p. 184.

(40) This is in strict keeping with what we have seen to be true of their pueblo sites. This is the conclusion of Mr. Bandelier, who discusses this subject in his essay on "Art of War Among the Mexicans." Peabody Museum Reports, Vol. II, p. 146, note 186.

(41) Bancroft: "Native Races," Vol. IV, p. 419.

(42) Bancroft's "Native Races," 393, note.

(43) Bancroft's "Native Races," Vol. IV, p. 395.

(44) Bandelier: "An Archaeological Tour in Mexico," p. 295.

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(46) Valentine, in "Proceedings Am. Antiq. Soc.," Oct., 1882.

(47) Bancroft's "Native Races," Vol. IV, p. 595.

(48) "Smithsonian Report," 1873, p. 373.

END OF CHAPTER XIII**********

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The Prehistoric World: or, Vanished Races

by E. A. Allen

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Chapter XIV.

THE MAYA TRIBES.

The geographical location of the Maya tribes--Description of Copan--Statue at Copan--Altars at Copan--Ruins at Quiriga Patinamit--Utatlan--Description of Palenque--The Palace at Palenque--The Temple of the Three Inscriptions--Temple of the Beau-relief--Temple of the Cross--Temple of the Sun--Maler's Temple of the Cross--Significance of the Palenque crosses--Statue at Palenque--Other ruins in Tobasco and Chiapas--Ruins in Yucatan--Uxmal--The Governor's House--The Nunnery--Room in Nunnery--The sculptured facades--Temple at Uxmal--Kabah--Zayi--

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Labna--Labphak--Chichen-Itza--The Nunnery--The Castillo--The Gymnasium--M. Le Plongon's researches--The tradition of the Three Brothers--Chaac-mol--Antiquity of Chichen.

In the Central American region of the Western Continent are found the ruins of what are pronounced by all scholars to be the highest civilization, and the most ancient in time, of any in the New World. There it arose, flourished, and tottered to its fall. Its glory had departed, its cities were a desolation, before the coming of the Spaniards. The explorer who would visit them finds himself confronted with very great difficulties. Their location is in a section of the country away from the beaten track of travel. Their sites are overspread with the luxuriant vegetation of tropical lands, through which the Indian's machete must carve a passage. The states in which they are situated are notorious for anarchy and misrule, and the climate is such that it is dangerous for those not acclimated to venture thither during a large part of the year. So it is not strange that but few have wandered among these ruins, and described them to the world at large.

Illustration of Map of Central America.----------

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But the accounts thus presented are interesting in the extreme, though they have raised many questions that have thus far defied solution. There is no doubt but what there exist large groups of ruins not yet described, structures and monuments which might, perhaps, throw some light on a past that now seems hopelessly lost. But the ruins thus far described are so numerous, their similarity is so evident, that we feel we have but little to hope from such undiscovered ruins. There are, doubtless, richly ornamented facades, grotesquely sculptured statues, and hieroglyphic-covered altars, but they would prove as much of an enigma as those already known. Our only hope is that some fortunate scholar will yet discover a key by whose aid the hieroglyphics now known may be read. Then, but not until then, will the darkness that now enshrouds ancient Maya civilization be dissipated.

As will be seen from a glance at the map, the most important ruins are in the modern states of Honduras, Guatemala, Chiapas, and especially Yucatan, the northern portion of this peninsula being literally studded with them. The river Usumacinta and its numerous tributaries flowing in a northern direction through

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Chiapas is regarded as the original home of the civilization whose ruins we are now to describe. From whence the tribes came that first settled in this valley is as yet an unsettled point. We notice that we have here another instance of the influence that fertile river valleys exert upon tribes settling therein. The stories told us of the civilization that flourished in primitive times in the valleys of the Euphrates and the Nile are not more wonderful--the ruins perhaps not more impressive--than are the traditions still extant, or the material remains fallen in picturesque ruins, of the civilization that once on a time held sway in the Usumacinta Valley.

One of the most famous groups of ruins in this section of the country is that of Copan, situated in Honduras, but very near the Guatemala line. This is commonly spoken of as "the oldest city in America," and has some evidence to substantiate this claim. Whatever be its relative antiquity, it is doubtless very old, as it was probably in ruins at the time of the conquest. There are several facts going to prove this assertion. When Cortez, in 1524, made his march to Honduras, he passed within a few leagues of this place. He makes no mention of it, which he would have been very apt to do had it been inhabited. Fifty years later Garcia De Palacio made a report on these ruins

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to the king of Spain. According to this report, it was then in much the same state as described by modern travelers, and the same mystery surrounded it, showing that it must have been in ruin much longer than the short space of time from the conquest to the date of his report. But few travelers have visited Copan, and fewer still have left a good description of it.
Mr. Stephens, accompanied by Mr. Catherwood, explored it in 1839, and this constitutes our main source of information.

We feel that here is the place to speak a word of caution.
In common with other writers, we have used the word cities, in speaking of the ruins of Maya civilization. In view of the criticisms that have been freely expressed by some of the best scholars of American ethnology, as to the generally accepted view of the civilization of the Mexican and Central American races, it is necessary to be on our guard as to the language employed. In the case of Copan, for instance, all the remains known, occur in an irregularly inclosed space of about nine hundred by sixteen hundred feet, while but a portion of such inclosed space is covered by the ruins themselves. Now it can, of course, be said that this space contains simply the remains of public buildings, so to speak--such as temples, palaces, and others--while the habitations of the great body of the common

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people, poorly built, and located outside of this area, may have vanished away. But, on the other hand, it may also be that in this small area we have the ruins of all the buildings that ever stood at Copan. In which case the word city is a misnomer; pueblo would be more appropriate. But looking at them in the simplest light, we shall find there is still a great deal to excite astonishment. Fragments of the wall originally inclosing the area in which are located the temple pyramids and statues, are still to be found. Very few particulars have been given of this wall. It was made of blocks of stone, and seems to have been twenty-five feet thick at the base, but the height is not given. The northern half of this area is occupied by a large terrace, somewhat irregular in outline, and impressed Mr. Stephens with the idea that it had not all been erected at the same time, but additions had been made from time to time. Instead of describing the ruins in full, we will let the illustration speak for itself. The dimensions of this terrace are, six hundred and twenty-four feet by eight hundred and nine feet. The side fronting on the river was perpendicular. The other three sides consist of ranges of steps and pyramidal structures. All these steps and pyramidal sides were once painted. The general height of the terrace was about seventy feet above the surface of the ground.

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Illustration of Ruins of Copan.----------

Though Mr. Stephens warns us that this terrace was not as large as the base of the Pyramid of Ghizeh, still it must have required an immense amount of work, since careful computations show that over twenty-six million cubic feet of stone were used in its construction. This stone was brought from the quarries two miles away. We must not forget that this work was performed by a people destitute of metallic tools.

On the terrace were the ruins of four pyramids, one rising to the height of one hundred and twenty-two feet. The surface of the terrace was not continuous. In two places there were court-yards, or sunken areas. The larger is ninety by one hundred and forty-four feet, and has a narrow passage-way leading into it from the north. Whatever buildings that once stood on this terrace, have vanished away. At one place only, on the terrace, fronting the river, are the remains of small, circular towers, thought to have been watch towers. The whole terrace was thickly overgrown by trees of a tropical growth.

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Mr Stephens noticed two immense Ceiba trees growing from the very summit of one of the pyramids. This structure has been called the Temple, and a great many surmises have been made as to the scenes once enacted there. If analogous to other structures in Central America, this terrace was surmounted with buildings. They may have been temples or palaces, or they may have been communal houses, not unlike those of New Mexico, to the north.

But of more importance than the ruins of this temple, are the statues and altars peculiar to this region. Mr. Stephens found fourteen of them. It seems very singular, indeed, to come upon these statues in the depth of a Central American forest, and they give us an idea of the state of advancement of these old tribes that nothing else does. They raise many queries. Why is it that so many are found here--so few elsewhere? Are they statues of noted personages, or idols? We are powerless to answer these questions. These secrets will only be yielded up when the hieroglyphics with which they are covered shall be read.

The places where these statues are found is seen to the right of the main body of ruins. It will be seen that only one is within

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the terrace area of the temple. Three others are situated near it, but the majority are near the southern end of the inclosure. We are not given the dimensions of all, but the smallest one given is eleven feet, eight inches high, by three feet, four inches width and depth; the largest, thirteen feet high, four feet wide, and three feet deep. No inconsiderable part of the labor on the statues must have been that of quarrying the large blocks of stone out of which they were carved, and transporting them to the place where found. They came from the same quarry as the other stones used in building; and so were transported a distance of about two miles. Mr. Stephens found, about midway to the quarry, a gigantic block, "which was probably on its way thither, to be carved and set up as an ornament, when the labors of the workmen were arrested."

Illustration of Copan Statue.----------

There is such a similarity in all these statues that a representation of one will suffice. This is the representation of one of the largest statues. It is seen to be standing on a sort of pedestal. A face occupies a central position on the

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front. Some of the faces have what may be a representation of a beard. In all but one, the expression is calm and peaceful. They were once painted red. Traces of color were still visible at the time of Mr. Stephens's visit. In all but one the hands are represented as placed back to back on the breast.

The complicated headdress and the ornaments on the robes utterly defy description. The sides and back of the statues are covered with hieroglyphics, though now and then a face is introduced. A side view of another statue shows this feature. All are convinced that we have in these hieroglyphics an explanation of each statue, but what it is, is yet unknown. Mr. Stephens says: "Of the moral effect of the monuments themselves, standing as they do, in the depths of a tropical forest, silent and solemn, strange in design, excellent in sculpture, rich in ornament, different from the works of any other people; their uses and purposes--their whole history--so entirely unknown, with hieroglyphics explaining all, but perfectly unintelligible, I shall not pretend to convey any idea. Often the imagination was pained in gazing at them. The tone which pervades the ruins is that of deep solemnity."

In front of most of the statues is what is called an altar,

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which would seem to imply that these monuments are really idols.

"The altars, like the idols, are all of a single block of stone. In general, they are not so richly ornamented, and are more faded and worn, or covered with moss. Some were completely buried, and of others it was difficult to make out more than the form. All differed in position, and doubtless had some distinct and peculiar reference to the idols before which they stood."

Illustration of Statue, Copan.----------

These altars are strongly suggestive of sacrificial scenes. The altar before the idol found in the court-yard on the terrace of the temple, is one of the most interesting objects found at Copan. It is six feet square and four feet high. The top is divided into thirty-six tablets of hieroglyphics which we may well imagine records some events in the history of this mysterious people. Each side has carved on it four human figures. They are generally all represented as facing the same way. We give an illustration of the east side. Each individual is sitting cross-legged on a hieroglyphic, and has a ponderous head-dress.

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Illustration of Hieroglyphics, top of Altar.---------

Mr Stephens found the quadrangle at the south-east corner of the plan to be thickly strewn with fragments of fine sculpture. Amongst the rest was a "remarkable portrait." (Shown later.) "It is probably the portrait of some king, chieftain, or sage. The mouth is injured, and part of the ornament over the wreath that crowns the head. The expression is noble and severe, and the whole character shows a close imitation of nature."

Colonel Gallindo, who visited Copan in 1835, discovered a vault very near where the circular towers are located, on the terrace fronting the river. This vault was five feet wide, ten feet long, and four feet high. It was used for burial purposes. Over fifty vessels of red pottery, containing human bones, were found in it.

Illustration of Bas-relief, East Site of Altar.----------

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In this hasty sketch we do not feel that we have done justice to Copan. It is, however, all the space we can devote to this interesting ruin. We call special attention to the hieroglyphics on the altar and the statues. We will find other hieroglyphics at Palenque, and in Yucatan, evidently derived from these. They have been made the subject of very interesting study, and we will refer to them again at another page. We also notice especially the fact that we have no ruined buildings at Copan. In this respect it stands almost alone among the Central American ruins. The distinguishing features, however, are the carved obelisks. They are evidently not the work of rude, people. Mr. Stephens, who was every way qualified to judge, declares that some of them "are in every way equal to the finest Egyptian workmanship, and that with the best instruments of modern times, it would be impossible to cut stone more perfectly."

Illustration of Portrait, Copan.----------

A dark mystery hangs over these ruins. Their builders are unknown. Whether we have here some temple sacred to the gods of

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the Maya pantheon or some palace made resplendent for royal owners, who can tell? Whether these are the ruins of the more substantial public buildings of a great city, of which all other buildings have vanished--or whether this is the remains of a prosperous pueblo, whose communal houses crowded the terraces, with sacrificial altars on the lofty pyramids--who knows? At long intervals a passing traveler visits them, ponders over their fast disappearing ruins, and goes his way. The veil drops, the tropical forest more securely environs them--and thus the years come and go over the ruins of Copan.

Nearly north from Copan (see map), about half-way to the coast, on the bank of the river Montagua, is found a small hamlet, by the name of Quiriga. Mr. Stephens, when traveling in the country in 1840, after many careful inquiries, heard of ruins near that place. Though not able to explore them himself, his companion, Mr. Catherwood, did. The result of this gentleman's exertion makes us acquainted with another group of ruins, in many respects similar to those of Copan, though apparently much farther gone in decay. His visit was a very hurried one; and he was not able to clear the moss away from the statues so as to draw them as it should be done.

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We must notice that, though called a city, all the monuments and fragments thus far brought to light are scattered over a space of some three thousand square feet. No plan has been given. We gather, however, from Stephens's work, that a pyramidal wall inclosed the ruins, as at Copan. No dimensions of this wall are given. Within the inclosure (if such it was) was a terrace. Here, again, dimensions are not given; but we are told it was about twenty-five feet to the top, and that the steps were, in some places, still perfect. It was constructed of neatly cut sandstone blocks. No monuments or altars were observed on the terrace, but in close proximity to it were fragments of sculpture. At another place near the wall, Mr. Catherwood mentions eight standing statues, one fallen one, and saw fragments of at least thirteen others. They are represented as being very similar to those of Copan, but two or three times as high. The hieroglyphics are pronounced identical with those already described.

There are no traditions extant of these ruins. No thorough exploration has been made. A city may have stood there; but, if so, its name is lost, its history unknown. "For centuries it has lain as completely buried as if covered with the lava of Vesuvius. Every traveler from Yzabel to Guatemala has passed

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within three hours of it. We ourselves have done the same; and yet there it lay, like the rock-built city of Edom, unvisited, unsought, and utterly unknown."

A large extent of territory in Guatemala and Yucatan is as yet an unknown country, or at least has never been thoroughly explored. Strange stories have flitted here and there of wonders yet to be seen. The country swarms with savages, living in much the same state as they were when the Spaniards invaded the country. They have never been conquered, and, in the rugged fastnesses of their land, bid defiance to all attempts to civilize them. From all we can learn, there are numerous groups of ruins scattered here and there--but of their nature we are, as yet, mostly in the dark.

We have, indeed, historical notices of a few places; but, as the color of an object is the same as that of the medium through which it is viewed, we can not help thinking that the glamour of romance, which the early Spanish writers threw around all their transactions in the New World, has woefully distorted these sketches. This same effect is to be noticed in all the descriptions of the ruins. Where one party sees the ruins of imperial cities, another can detect but the ruins of imposing

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pueblos, with their temples and pyramids. It can be truthfully stated, that this is a land of ruins. Every few leagues, as far as it has been explored, are the remains of structures that excite astonishment.

The meager reports given us raise our curiosity, but fail to satisfy it. Almost all explorers relate stories of the existence of an aboriginal city. The location of this city shifts from place to place; always, however, in a section of country where no white men are allowed to intrude. The Cure of Santa Cruz, in whom Mr. Stephens expressed confidence, declared that he had, years before, climbed to the summit of a lofty sierra, and then "he looked over an immense plain, extending to Yucatan and the Gulf of Mexico, and saw, at a great distance, a large city, spread over a great space, with turrets white and glittering in the sun." We are afraid a search for this mythical city would be attended with much the same results as rewards the child's pursuit of a golden treasure at the end of the rainbow.

As a sample of known ruins, we might cite two in the immediate neighborhood of Quirigua. At the distance of a few leagues, both above and below this latter place, are the remains of former settlements. The accounts are very brief. Of the ruins below, we

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are informed that they consist of the remains of a quadrilateral pyramid, with traced sides, up which steps lead to the summit platform, where *debris* of hewn stone are enveloped in dense vegetation." Of the ruins located above Quirigua, we are simply told "of a large area covered with aboriginal relics--in the form of ruined stone structures, vases and idols of burned clay, and monoliths, buried for the most part in the earth."

These descriptions will serve as samples of many others, and, though they are interesting in their way, we are afraid they would grow tiresome by repetition. We will, therefore, only make mention of one or two important points; premising, however, that, beyond a doubt, similar ruins are scattered up and down the river valleys of the entire country.

Two cities of ancient Guatemala especially mentioned by Spanish writers are Utatlan and Patinamit. Here, if we may believe their recitals, were the capitals of two powerful monarchies. The pictures they draw for us are those of cities of Oriental magnificence. The system of government they describe is that of absolute monarchy, founded on feudalism. We will briefly glance at the remains of these "imperial cities." Their location is seen on the map. The approach to Patinamit is very difficult,

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indeed. Situated on a high table-land, it commands an almost boundless view. On every side are immense ravines, and the only way of entering it was by a narrow passage cut in the side of the ravine, twenty or thirty feet deep, and not wide enough for two horsemen to ride abreast.

Mr. Stephens mentions coming to a wall of stone, but broken and confused. The ground beyond was covered with mounds of ruins, and in one place he saw the foundations of two buildings, one of them being one hundred and fifty by fifty feet. He does not give us the area covered by the ruins, but there is nothing in his description to make us think it very large in extent. He also quotes for us Fuentes's description of this same place, written, however, one hundred and forty years earlier. In this he speaks of the remains of a magnificent building, perfectly square, each side measuring one hundred paces, constructed of hewn stones, extremely well put together. In front of the building is a large square, on one side of which stand the ruins of a sumptuous palace; and near to it are the foundations of several houses. He also asserts that traces of streets could still be seen, and that they were straight and spacious, crossing each other at right angles. Fuentes certainly had remarkable eyes. He wrote a description of Copan which not only differs from all accounts of

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modern travelers, but also from the still earlier description by Garcia De Palacio.

Patinamit means "The City," and is represented as the capital city of the Cakchiquel "monarchy." The site of the city was certainly admirably chosen for defense, and we have no doubt but what here was the head-quarters of a powerful tribe of Indians; but, until scholars have settled some very disputed points about the civilization of the Central American nations, we must be cautious in the use of the words monarchy and palaces as applied to these old people or these ruins.

Thirty-five or forty miles north-eastward from Patinamit we come to the ruins of the most renowned city in Guatemala at the time of the conquest. This was Utatlan, the Quiche capital, a city which the Spaniards compared to Mexico in magnificence, and which, at the time of its destruction, was at its zenith of prosperity. The location was very similar to that of Patinamit. It also stood on an elevated plateau, with immense ravines on every side. It was approached only at one point, and guarding this one point of approach was a line of fortifications. They consisted of the remains of stone buildings, probably towers. The stones were well cut and laid together.

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These fortifications were united by a ditch.

Within this line of towers stood a structure, generally regarded as a fort, directly guarding the line of approach. Steps led up a pyramidal structure having three terraces, one over the other. The top was protected by a wall of stone, and from the center rose a tower. Beyond this fort was the ruins of the city.
Mr. Stephens describes a large ruin which is called The Palace. It is said, in round numbers, to have been eleven hundred by twenty-two hundred feet. As this area is more than fifty-five acres in extent, we can see it was not a palace in our sense of the word. The stones of which it was composed have been largely removed to build the modern town of Santa Cruz. But the floor could still be traced, and some remains of partition walls.
The floor was still covered with hard cement.

Adjoining the palace was a large plaza or court-yard, also cemented, in the center of which was the ruins of a fountain.
Another structure still remaining was a small pyramid, at the top of which was probably a temple, or, at least, a place of sacrifice. No hieroglyphics or statues have been found here.
A few terra-cotta figures have been found, and one small gold image. It would seem from this description that the ruins simply

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consist of a few large structures. For aught we know, they may have been communal houses.

Mr. Stephens, however, condenses Fuentes's account, which is truly wonderful. According to him, the center of the city was occupied by the royal palaces, around which were grouped the houses of the nobles. The extremities were inhabited by the plebeians. He tells us there were many sumptuous buildings, the most superb of which was a seminary, where between five and six thousand children were educated at royal expense. The palace was formed of hewn stones of various colors. There were six principal divisions. In one was lodged the king's body-guard, in the second the princes and the relatives of the king, and so forth.

It is not necessary to remind the reader that it is very doubtful whether such a state of things ever existed. It is related, for instance, that the king marched from Utatlan with seventy-two thousand warriors to repel the attack of Alvarade. This would indicate a total population of between two and three hundred thousand souls. It seems to us that a city of that size would not so completely disappear in a little over three centuries that a careful explorer could find only the ruins of a

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few large buildings.

We do not feel that we have done near justice to the ruins of Guatemala. As we have before remarked, there are, doubtless, many ruins not yet brought to light. They are rapidly disappearing, and we do not know that we will ever possess a description of them, or understand their real import. The light of history, indeed, fell on the two groups of ruins last described. But the Spanish writers were totally unacquainted with Indian society, and may, therefore, have widely erred in applying to their government terms suited only to European ideas of the sixteenth century. And it is not doubted but that their estimate of the population of the towns, and of the enemies with which they had to contend, were often greatly overdrawn. In short, the remains themselves are remarkable, but every ruined pyramid is not necessarily the remains of a great very great city, nor every large building in ruins necessarily a palace.

Going northward out of Guatemala, we pass into the modern state of Chiapas. This is described a country of great natural beauty and fertility. And here it is that we meet with a group of ruins which have been an object of great interest to the scientific

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world. They have been carefully studied and described, and many theories have been enunciated as to their builders, their history, and civilization. The place is supposed to have been deserted and in ruins when Cortez landed in the country. At any rate, he marched within a few leagues of it, but, as in the case of Copan, he is silent in regard to it.

They take their name from the modern town of Palenque, near which they are located. This town was founded in 1564. It was once a place of considerable importance, but its trade has died away, and now it would not be known were it not for the ruins of a former people located near it. Though distant from the village only some eight miles, nearly two centuries went by before their existence was known. Had they been visited and described at the time of the founding of the village, no doubt much that is now mysterious in regard to them would have been cleared away. But for two centuries they were allowed to sleep undisturbed in the depths of the forest, and in that time the elements played sad havoc with the buildings, inscriptions, and ornaments. What are left are not sufficient to impart full information. Imagination is too apt to supply the details, and these ruins, grand in proportion, wonderful in location, enwrapt by dense forests, visited by the storms of tropical lands, are made to do

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service in setting forth a picture of society and times which we are afraid has but little real foundation to rest upon.

The ruins of Palenque are the first which awakened attention to the existence of ancient ruins in America, and, therefore, it may not come amiss to state more particularly the circumstances of their first discovery. The existence of an aboriginal city in this locality was entirely unknown; there were no traditions even that it had ever existed. Of course the natives of the modern town of Palenque must have known of their existence, but no account of them was published. They are said to have been discovered in 1750 by a party of traveling Spaniards. This statement Mr. Stephens doubts. The first account was published in 1784. The Spanish authorities finally ordered an exploration. This was made under the auspices of Captain Del Rio, who arrived on the ground in 1787. His report was locked up in the government archives, and was not made public until 1822.

The reception of this report illustrates how little interest is taken in American antiquities. It was scarcely noticed by the *Scientific World.* As Mr. Stephens remarks, "If a like discovery had been made in Italy, Greece, Egypt, or Asia, within the reach of European travel, it would have created an interest

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not inferior to the discovery of Herculaneum, or Pompeii, or the ruins of Paestum." But, from some cause, so little notice was taken of this report that in 1831 the explorations of Colonel Galindo, whose works we have referred to at Copan, was spoken of as a new discovery. In the meantime another government expedition under the direction of Captain Dupaix explored these ruins in 1807. Owing to the wars in Europe and the revolution in Mexico, his report was not published until 1835. Mr. Stephens visited the ruins in 1840. His account, profusely illustrated, was the means of making known to a large class of readers the wonderful nature of the ruins, not only at Palenque, but in Yucatan as well.

In this outline we have given an account of the early explorations at Palenque. Private individuals have visited them, and governments have organized exploring expeditions, and by both pencil and pen made us familiar with them. As to the remains actually in existence, these accounts agree fairly well, but we have some perplexing differences as to the area covered by the ruins. Where the early explorers could trace the ruins of a large city modern travelers can find but a few ruined structures, which, however, excite our liveliest interest.

One of the earliest accounts speaks of the ruins of over two

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hundred buildings. Another speaks of them as covering an area of many square miles. Mr. Stephens thinks a few acres would suffice.

From the researches of M. Charney, it would seem that the ruins are really scattered over quite an area. His exploration made in 1881, seems to confirm the older writers. With abundant means at his command, he was enabled to explore the forest, and he found many ruins which escaped the other observers. According to him, the ruins are scattered over an area extending about one mile and a quarter from north to south, and about one and three-fourths from east to west. Throughout this space, the ruined structures were in all respects similar to those previously described, consisting altogether of what he calls palaces and temples.

There seems to be no especial order in the arrangement of the buildings. They are separated by quite an interval, excepting to the south of the palace, where there are groups of buildings near together. The fact that such careful explorers as Stephens and Waldeck failed to notice these additional ruins, gives us a faint idea of the density of the forest.

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Illustration of Plan of Palenque.----------

The plan represents the distribution and relative size of the ruins of which we have definite descriptions. Those having no numbers are some of the groups that were passed by as of no account. We must understand that so dense is the forest that not one of these structures is visible from its neighbors. Where the trees are cut down, as they have been several times, only a few years are necessary for it to regain its former density, and each explorer must begin anew.

The largest structure, marked one on the plan, is known as the palace. This is only a conjectural name. We have no reason, except its size, to suppose it the residence of a royal owner. Its base is a pyramid which, Mr. Stephens tells us, is of oblong form, forty feet high, three hundred and ten feet in front and rear, and two hundred and sixty feet on each side. The pyramid was formerly faced with stone, which has been thrown down by the growth of trees, so that its form is hardly distinguishable. The sides may once have been covered with cement, and perhaps painted. Dupaix, who examined these ruins in 1808, so represents

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them. Mr. Stephens expressly states that the eastern front was the principal entrance. Mr. Waldeck, however, detected traces of stairways on the northern side. M. Charney has settled the point, that the principal entrance was on the northern side.

The principal bulk of this pyramid seems to have been earth; the facing only being composed of stone. Mr. Bancroft thinks he has discovered evidence that there were four or more thick foundation-walls built from the surface of the ground to support the buildings on top of the pyramid; that the space between these walls was subsequently filled with earth, and that sloping embankments, faced with stones, were built upon the outside. The summit platform of this pyramid supports the building, or collection of buildings, known as the palace. Though generally spoken of as one building, we think we have here the ruins of a number of buildings.

Probably the original inhabitants built a continuous structure close to the edge of the platform, leaving the interior for an open court. Subsequently, as population increased, rather than resort to the labor necessary to raise a new pyramidal structure, they erected other buildings on this court. From the plan, as given by Mr. Stephens, there seems to have been no less

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than five such put up, besides the tower. Thus covering the platform with a somewhat confused mass of buildings, and, instead of the large open court, there were left only three narrow courts, and one somewhat larger--seventy by eighty feet. The building erected near the edge of the platform, inclosing the court, was some two hundred and twenty-eight feet on its east and west sides, by one hundred and eighty feet on its north and south sides, and about thirty feet high.

Illustration of General View of Palace.----------

Our general view, taken from Mr. Stephens's works, represents the ruined eastern front of this building, surmounting the pyramid. Trees are seen growing all over the ruins. The outer wall is pierced by numerous doorways which, being somewhat wider than the space that separates them, gives to the whole the appearance of a portico with wide piers: no remains of the doors themselves have been discovered. Drilled holes in the projecting cornice, immediately above the doorway, gave Mr. Stephens the impression that an immense cotton curtain, perhaps painted in a style corresponding with the ornaments, had been extended the

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whole front, which was raised or lowered, according to the weather. The lintels of the doors were of wood. They had long since vanished, and the stones over the doorway fallen down. Of the piers separating the doorways, only fifteen were found standing, but the crumbling remains of the others were readily traced on the ruins.

Illustration of Bas-relief, Palenque.----------

Each of the standing piers, and presumably all the others, was ornamented with a bas-relief in stucco. This cut gives us a good example of this style of ornamentation. We notice portions of a richly ornamented border. This stucco work consists of human figures in various attitudes, having a variety of dress, ornaments, and insignia. The stucco is said to be nearly as hard as the stone itself. Traces of paint, with which the figures were once ornamented, were still to be seen. The conjectures in regard to these figures, have been innumerable. Vividly painted, and placed in a conspicuous place on the wall, we may be very sure they were full of significance to the builders.

Three hieroglyphics are placed over the head of each group, but

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so far, they are as little understood as the figures themselves. We can imagine the effect, when the building was still perfect and entire, and all the piers were thus ornamented.

Illustration of Cross-section Palace, Palenque.----

Passing to the top of the pyramid, we find the construction of the building whose outer wall we have been describing, to be substantially as follows: Three parallel walls, from two to three feet in thickness, composed of hewn stones, were erected about nine feet apart. At the height of ten feet, the walls commenced approaching each other; not, however, in an arch, for this was unknown, but in a triangular manner, the stones in each course projecting a little farther out. This cut represents a cross-section of the buildings, and shows also the slight cornice. All inequalities in the surface, as here represented, were then filled with cement, thus furnishing a smooth surface, which was then painted. The two outer walls were plentifully supplied with doorways; the central wall had but few. We are only given the description of one, which may not apply to all. This one, opposite the entrance on the east side, has a

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trefoil-shaped arch over the door, thus giving it this shape. Besides the few doorways, the central wall had numerous depressions, or niches, some of which served for ventilation, others for the support of beams, and perhaps others as receptacles for torches or idols. This principle of construction is substantially the same for all the buildings in the interior of the court, and indeed for all the buildings at Palenque.

Illustration of Trefoil Arch.----------

Passing through the doorway just described, we come into the second corridor, and continuing through that, we come to what was once a large court; but, as we stated, it was subsequently built over so as to leave only a few courts. The largest one, eighty by seventy feet, is immediately before us, with a range of steps leading down into it. On each side of the stairway is sculptured, on stucco, a row of grim and gigantic figures. The engraving opposite represents the same. "They are adorned with rich headdresses and necklaces, but their attitude is that of pain and trouble. The design and anatomical proportions of the figures are faulty, but there is a force of expression about

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them which shows the skill and conceptive force of the artist."
From this small court stairways lead to the other buildings
situated around it.

Illustration of Entrance to Principal Court.----------

Stucco ornaments were plentiful. In one room, rather more richly
ornamented than the others, was found a stone tablet, which is
the only important piece of stone sculpture about the palace.
We are told it is of hard stone, four feet long by three feet
wide, and the sculpture is in bas-relief. It is set in the wall,
and around it are the remains of a rich stucco border. Its
significance is unknown. We must notice the small medallion,
containing a face, suspended by a necklace of pearls from the
neck of the principal figure. Mr. Stephens conjectures that it
may represent the sun. Mr. Waldeck gives a drawing of this same
subject; but instead of a face, he represents a cross.

Illustration of Stone Tablet.----------

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In the general view we see a tower rising up from the mass of ruins. Mr. Stephens speaks of this tower as follows. "This tower is conspicuous by its height and proportions, but an examination in detail is found unsatisfactory and uninteresting. The base is thirty feet square, and it has three stories. Entering over a heap of rubbish at the base, we found within another tower distinct from the outer one, and a stone staircase, so narrow that a large man could not ascend it. The staircase terminated against a dead stone ceiling, closing all further passages, the last step being only six or eight inches from it. For what purpose a staircase was carried up to such a bootless termination we could not conjecture. The whole tower was a substantial stone structure, and in its arrangements and purposes about as incomprehensible as the sculptured tablets."

At the best we can do, it is hard to give such a description of this ruin that it can be readily understood, so we will present a restoration of it by a German artist, taken, however, from Mr. Bancroft's work. This is very useful to us, since it conveys an idea of how the palace looked when it was complete. This view also includes a second structure, which we will examine soon. We notice the numerous doorways leading into the

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first corridor, the ornamental pier-like portions of the wall separating the doors, and the several buildings on the court; rising over all, the tower, which would have been better if the spire had been omitted.

Illustration of Palace, Palenque.----------

This may have been a real palace. Its rooms may have been the habitations of royalty, and its corridors may have resounded with the tread of noble personages. M. Charney thinks the palace must have been the home of priests, and not kings--in fact, that it was a monastery, where the priests lived who ministered in the neighboring temples. He thinks Palenque was a holy place, a prehistoric Mecca. We must he cautious about accepting any theory until scholars are more agreed about the plan of government and society among the Central American tribes. But, whatever it was, many years have passed by since it was deserted. For centuries tropical storms have beat against the stuccoed figures. The court-yards and corridors are overrun with vegetation, and great trees are growing on the very top of the tower. So complete is the ruin that it is with difficulty the

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plan can be made out. The traveler, as he gazes upon it, can scarcely resist letting fancy restore the scene as it was before the hand of ruin had swept over it. In imagination he beholds it perfect in its amplitude and rich decoration, and occupied by the strange people whose portraits and figures may perhaps adorn its walls.

Illustration of Ruined Temple of the Three Tablets.-----

We must now describe the more important of the remaining structures of Palenque. Glancing at the plan for a moment, we see to the south-west of the palace a ruin marked 2. This is the site of a pyramidal structure known as the "Temple of the Three Tablets," or "Temple of Inscriptions." The pyramid is not as large in area as the palace, though of a greater height.
It measures in height one hundred and ten feet on the slope, but we are not given the other dimensions. All the sides, which were very steep, seem to have had steps. Trees have grown up all over the pyramid and on the top of the building. This illustration, taken from Mr. Stephens's work, can not fail to impress on us the luxuriant growth of tropical vegetation, and we can also see how such a growth must accelerate the ruin. The stone steps

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leading up the sides of the pyramid have been thrown down, and such must be in time the fate of the building itself.

The building on the summit platform does not cover all the area. It is seventy-six feet front by twenty-five feet deep and about thirty-five feet high.

This small cut is a representation of the same building on a small scale, but cleared of trees and vines. The roof is seen to consist of two parts, sloping at different angles. The lower part was covered with stucco ornaments, which, though too much injured to be drawn, gave the impression that, when perfect and painted, they must have been rich and imposing. The upper slope is of solid masonry. "Along the top was a range of pillars, eighteen inches high and twelve apart, made of small pieces of stone laid in mortar and covered with stucco, having somewhat the appearance of a low, open balustrade."

Illustration of Elevation Temple of the Three Tablets.-------

In this wood-cut the front wall, as in the palace, presents more the appearance of a row of piers than any thing else. Each of

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the corner piers contains on its surface hieroglyphics, each of which contains ninety-six squares. The other piers have ornaments of stucco similar to those we have already examined on the palace. In the building itself we have the usual three parallel walls. In this case, however, the second corridor is divided into three rooms, and there is no opening in the third wall, unless it be three small openings for air. The central wall is four or five feet thick. The interior is very plain.

The principal point of interest about the building, from whence the name is derived, is three tablets of hieroglyphics. One on either side of the principal doorway of the middle wall, and the third in the rear wall of the middle room. Being so similar to other tablets, it is not necessary to give separate cuts of them. The similarity to those of Copan is very great, the differences being in minute points, which only critical examination would detect. Mr. Stephens tells us that the Indians call this building a school. The priests who came to visit him at the ruins called it a temple of justice, and said the tablets contained the law. We do not think either are very safe guides to follow.

At number three on the plan are the ruins of an edifice which is

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fast disappearing. The outer wall had already fallen at the time of Mr. Stephens's visit. It stands on the bank of the stream. The pyramid base is one hundred feet high on the slope. The building on the top is twenty-five feet front by eighteen feet deep. In the inner corridor could be dimly traced the outlines of a beautiful piece of stucco work. At the time of Waldeck's visit it was still complete, so we are enabled to give a cut of it.

Illustration of The Beau-Relief.----------

We are sure the readers will not fail to notice the many points which make this such an exceptionally fine piece of work. In the original drawing the grace of the arms and wrists is truly matchless, and the chest muscles are displayed in the most perfect manner. The embroidered girdle and folded drapery of the figure, as well as the drapery around the leopard's neck, are arranged with taste. The head-dress is not unlike a Roman helmet in front, with the addition of numerous plumes. The sandals of the feet are secured by a cord and rosette, while the ornaments on the animal's ankles seem secured by leather straps.

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Mr. Waldeck, however, who drew this sketch, is supposed to have drawn at times better than his model. This is generally called the "Temple of the Beau-relief." Mr. Holden, in his able article already referred to, comes to the conclusion that this figure represents the god Quetzalcohuatl, the nature god of the Mayas.

Illustration of Temple of the Cross. (Smithsonian Institute.)--

Eastward from the palace, and across the creek, are seen on the plan the location of two other structures. The one marked is a somewhat famous structure, which, for reasons that will soon appear, is called the "Temple of the Cross." The pyramid in this case is one hundred and thirty-four feet on the slope. It, however, stands on a terrace about sixty feet on the slope. The forest is so dense that, though other structures are but a short distance from it, yet they can not be seen. The last two engravings represent the building and the ground plan. This is not a fanciful sketch, but is a restoration, "from such remains and indications that it is impossible to make any thing else out of it."

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Illustration of Plan of Temple. (Smithsonian Institute.)---

"The building is fifty feet front, thirty-one feet deep, and has three door-ways. The whole front was covered with stucco ornaments. The two outer piers contain hieroglyphics." We notice a new feature about the roof. It is similar to the roof of the temple of the "Three Tablets," in having two different slopes--the lower one covered with stucco ornaments, but the range of pillars along the roof is here replaced by a peculiar two-storied arrangement nearly sixteen feet high. Mr. Stephens says: "The long sides of this narrow structure are of open stucco-work, formed into curious and indescribable devices, human figures with legs and arms spreading and apertures between, and the whole was once loaded with rich and elegant ornaments in stucco relief. Its appearance at a distance must have been that of a high, fanciful lattice. It was perfectly unique--different from the works of any other people with which we are familiar, and its uses and purposes entirely incomprehensible."

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It was evidently added to the temple solely for the sake of appearance. One writer believes the roof structures were erected by some people that succeeded the original builders of the temple. The plan of the temple gives us a clear idea of the arrangement of the inner rooms. Our principal interest centers in the altar, which we notice placed in the center of the back room. We give an illustration of a similar altar-form in the temple, at number 5 of the plan. In form it is that of an inclosed chamber, having a roof of its own. The altar in the Temple of the Cross was very similar to this. Mr. Stephens's description is as follows: "The top of the doorway was gorgeous with stuccoed ornaments, and on the piers at each side were stone tablets in bas-relief. Within, the chamber is thirteen feet wide and seven feet deep."

Illustration of Altar in Temple of the Sun.--(Bureau of Ethnology.)----------

The room was plain within, and right against the back was the famous "Tablet of the Cross." This tablet was six feet four inches high, ten feet eight inches wide, and formed of three

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stones. The right-hand one is now in the National Museum in Washington. The central one, though torn from its original place, is still at the ruins. The next cut gives us only the sculptured part of the tablet. On both the right and left-hand were tablets of hieroglyphics. A long chain of ornaments hung suspended from the cap of the right-hand figure. The two figures are regarded as priests. The cross is very plainly outlined, and is the regular Latin one. Considerable discussion has arisen as to what supports the cross. Dr. Brinton thinks it a serpent. Others think it a human skull. We must also notice the bird on top of the cross. It is almost impossible to make out the species. The right-hand figure is offering it something.

Illustration of Tablet of the Cross.----------

We must refer to some more tablets found at Palenque before proceeding further. At number five of the plan was a temple but little smaller than the one just described. There is, however, such a similarity between the buildings, that it is not necessary to give illustrations. The temple, also, had an inclosed altar; and against the back of that was placed the

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tablet which was very similar to the one just described. This illustration represents the sculptured portions. On each side were tablets of hieroglyphics. It needs but a glance to show that the priests are, evidently, the same personages as in the other tablet.

Illustration of The Sun.----------

The one on the left is standing on the back of a human being. The one on the right is, perhaps, standing on a beast; or, if a human being, he is crushed beneath the weight of the priest. Two other human figures support a platform, from which rise two batons crossed like a St. Andrew's cross. These support a mask, from the center of which a hideous human face looks out. The Aztecs sometimes represented the sun by such a mask, and hence the name "Temple of the Sun."

In still another temple, situated but a short distance from the others, was discovered a third tablet, which is shown in the cut opposite. We give all the tablet, showing the hieroglyphics as well. We must compare this with the first tablet given.

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The priests are, evidently, the same--but, notice, they stand on different sides of the cross. The same priest is making the offering as in the first, and the same bird is seen on the top of the cross. The priests stand on flowered ornaments. The support of the cross resembles the same thing as in the first but whether it is a human skull, or a serpent, is hard to tell. The cross itself is not as well outlined. The two arms are floral ornaments. We must also notice the two faces seen on the upright part.

Illustration of Maler's Cross.----------

These tablets are all of great interest. That of the cross, the first one given, has attracted more attention than almost any other in the field of American antiquities. This is largely owing to the cross. As far as the sacred emblem itself is concerned, we do not think this tablet of more significance than that of the sun. It is well known that the cross, as a sacred emblem, had peculiar significance in the ancient religions of the world. Its use as such has come down to us from time immemorial. On the first expedition of the Spaniards, in 1518,

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to the coast and islands of Yucatan, they discovered that the cross was of some significance to the natives. In the island of Cozumel they found a large cross, to which the natives prayed for rain.

Mr. Brinton thinks that the source of this veneration of the cross, like the the sacredness of the number four, of which he gives numerous illustrations, is the four cardinal points. From these points blow the four winds which bring the fertilizing rains, and thus render the earth fruitful; and hence the cross, in so many and widely separated portions of the earth, is used as the symbol of the life-giving, creative, and fertilizing principle in nature. He thinks this is, perhaps, the significance of these Palenque crosses. It is true we have different forms of the cross; but in ancient sculpture they seem to have been of equal importance.

The results of these inquiries into the hidden meaning of these tablets are not devoid of interest; but, thus far, but few conclusions of value have been obtained. They have been made to do service in support of some far-fetched theories. The early Spanish writers on these subjects concluded that the crosses found in Central America were positive proof that St. Thomas had

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traveled through the country preaching the doctrines of Christianity. The padres, who came to visit Mr. Stephens at the ruins, "at the sight of it, immediately decided that the old inhabitants of Palenque were Christians, and fixed the age of the buildings in the third century."

Wilson finds in the tablets of the cross a strong argument for the existence of a great Phoenician empire in Central America. This tablet represents, he thinks, the sacrifice of a child to Astarte, also called Ashtoreth, the great female deity of the ancient Semitic nations on both sides of the Euphrates, but chiefly of Phoenicia. The original meaning of this word was "Queen of Heaven." Modern scholars do not think these early speculations of the slightest worth. Dr. Charles Rau concludes that as reasonable a conjecture as any is the supposition that it represents a sacrifice to the god of rain, made, perhaps, at a time of drought, apparently influenced to that conclusion by the fact that the natives of Cozumel regarded a cross in such a light, and further that a cross represents the moisture-bearing winds.

E. S. Holden has made a critical study of the hieroglyphics of Copan and Palenque. Though far from complete, most

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interesting results have been obtained. We can not do more than set forth the results of his investigations. He concludes, from a careful study of the tablets of the cross and of the sun, that in both the left-hand priests are representatives of the god of war, the right-hand priests being in both representatives of the god of rain and water. In Mexico these deities frequently occupied the same temple. He does not state his conclusions in regard to the central figures in the tablets. Mr. Brinton thinks the central figure in the tablet of the cross is a rebus for the nature god Quetzalcohuatl. The cross was one of the symbols of Quetzalcohuatl, as such signifying the four winds of which he was lord. Another of his symbols was a bird. We notice the two symbols present in the tablet. Mr. Holden also finds that the glyph standing for this god occurs several times in the tables of hieroglyphics belonging to this figure.

According to these last views, then, the old Palenquians seem to have been a very religious people, and Quetzalcohuatl, the god of peace, seems to have been their principal deity, differing in this regard from Mexico, where all honor was paid to the god of war. We are not given any explanation of the Temple of the Three Tablets, but the other temples have to do with the worship of

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this benign deity. The beautiful stucco-work in the Temple of the Beau-relief, Mr. Holden thinks, also represents him. At the Temples of the Cross, if we be right as to the meaning of the central figure, the priests of the god of war and the god of rain do honor to him.

Mr. Bandelier makes a statement in regard to the cross which, if it be accepted, clears away a number of theories. He remarks: "The cross, though frequently used previously to the conquest by the Aborigines of Mexico and Central America as an ornament, was not at all an object of worship among them. Besides, there is a vast difference between the cross and the crucifix. What has been taken for the latter on sculptures, like the 'Palenque tablet,' is merely the symbol of the 'Newfire,' or close of a period of fifty-two years. It is the fire drill more or less ornamented." According to this view, these interesting tablets have reference to the ceremonies observed by the Mayas at the expiration of a cycle.

It now only remains to describe some miscellaneous relics obtained from Palenque. But few specimens of pottery have been found. One of the early explorers speaks of finding an earthen vessel about a foot in diameter. Waldeck made an exploration in

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a portion of the palace area, and found a gallery containing hewn blocks of stone and earthen cups and vases, with many little earthen balls of different colors. He also speaks of a fine specimen of terra-cotta.

The only statues known were found near the Temple of the Cross. There were two of them, and they supported a platform before the central doorway. One was broken to pieces; the other is here represented. Many writers point out resemblances between this figure and some Egyptian statues.

Illustration of Statue, Palenque. (Smith. Inst.)------

In the village of Palenque, built in the wall of a church, are two stone tablets which once stood on each side of the doorway of the altar containing the tablet of the cross. Mr. Stephens was under the impression that they were originally placed on the altar of the tablet of the sun, and they are so represented in the cut (Illustration of Altar in the Temple of the Sun.) earlier. This plate represents the left-hand figure. The only explanation which we have met is contained in that

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oft-quoted article by Mr. Holden. He regards it as the representation of the Maya god of war. We are warned that the weak part of Mr. Holden's method is his assumption that the mythology of the Mayas was the same as that of the Aztecs, when the evidence is not strong enough to assert such a fact.

Illustration of Bas-relief of the left-hand of the Altar of the Cross. (Bureau of Ethnology.)----------

We feel that we have been somewhat lengthy in describing the ruins of Palenque. But it is one of the most important groups of ruins that this continent possesses. The most faithful work on the part of the scholars of all lands has not as yet succeeded in clearing up the mystery connected with it. We can tread the courts of their ancient citadel, clamber up to the ruined temples and altars, and gaze on the unread hieroglyphics, but, with all our efforts, we know but little of its history.

There was a time when the forest did not entwine these ruins. Once unknown priests ministered at these altars. But cacique, or king, and priest have alike passed away. The nation, if such it was, has vanished, and their descendants are probably to be

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found in the savage tribes of Yucatan to-day. "In the romance of the world's history," says Mr. Stephens, "nothing ever impressed me more forcibly than the spectacle of this once great and lovely city, overturned, desolate, and lost, discovered by accident, overgrown with trees for miles around, without even a name to distinguish it. Apart from every thing else, it was a mournful witness to the world's mutation.

'"Nations melt
From power's high pinnacle, when they have felt
The sunshine for awhile, and downward go.'"

The ruins at Palenque have been so well known, that but little attention has been given to other ruins in the States of Tobasco and Chiapas; and yet, according to M. Charney, imposing ruins of great extent exist in the western part of Tobasco. At a place about thirty-five miles from San Juan, in a north-westerly direction, he found veritable mountains of ruins "overgrown with a luxuriant vegetation." In the absence of cuts, we can not do more than give a general idea of these ruins.

He asserts that the whole State of Tobasco, and part of Chiapas, is covered with ruins. One landed proprietor informed him that,

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on his estate, he had counted over three hundred pyramids, all of them covered with ruins. In this connection he refers to the assertions of some of the early Spanish voyagers, that, when skirting the shores of Tobasco, they "saw on the shore, and far in the interior, a multitude of structures, whose white and polished walls glittered in the sun." On one large pyramid, one hundred and fifteen feet high, he found the remains of a building two hundred and thirty-five feet long.

This building is named the palace. In this building we met with the type that we have learned is the prevailing one further south--that is, three parallel walls, forming two rows of rooms. In general, the rooms are not well arranged for comfort, according to our opinion; but they were, doubtless, well adapted to the communal mode of life prevalent among the Indians. M. Charney seems to have been strongly impressed with the number and importance of the ruins in this State; but, strangely enough, others have not mentioned them. He says: "I am daily receiving information about the ruins scattered all over the State of Tobasco, hidden in the forests. ... The imagination fails to realize the vast amount of labor it would involve to explore even a tithe of these ancient sites. These mountains of ruins extend over twelve miles. We still see the hollows in the

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ground whence the soil was taken for the construction of these pyramids. But they did not consist merely of clay; bricks, too, entered into their construction, and there were strengthening walls to make them firmer. These structures are more wonderful than the pyramids and the other works at Teotihuacan, and they far surpass the pyramids of Egypt.

In the neighboring State of Chiapas, we find the location of several groups of ruins. At Ocosingo, we have the evident traces of a large settlement. Mr. Stephens mentions four or five pyramids crowned with buildings. Immediately beyond these pyramids he came upon an open plateau, which he considered to have been the site of the city proper. It was protected on all sides by the same high terraces, overlooking for a great distance the whole country around, and rendering it impossible for an enemy to approach from any quarter without being discovered. "Across this table was a high and narrow causeway, which seemed partly natural and partly artificial, and at some distance on which was a mound, with the foundation of a building that had probably been a tower. Beyond this the causeway extended till it joined a range of mountains. ... There was no place we had seen which gave us such an idea of the vastness of the works erected by the aboriginal inhabitants."

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The ruins at Palenque are considered by some to belong to the ancient period of Maya architecture; those we are now to examine are regarded as of more modern date. This is at least true with respect to the time of their abandonment. Though the efforts of explorers in Yucatan have been attended with rich results, still few places have been fully described. The country is fairly dotted with sites of aboriginal settlements. In all probability there are many that are yet unknown. Hidden in tropical jungles, they are fast falling into meaningless mounds of *debris*.

The early Spanish explorers, skirting the coasts of Yucatan, gazed in astonishment at the views they occasionally obtained of pyramids crowned with temples and imposing buildings. But this gleam of historic light was but momentary in duration. It served but to throw a sunset glow over the doomed tribes and civilization of the Mayas. By the aid of that dim, uncertain light, we are asked to recognize a form of government and society which, under the clearer light of modern researches is seen to bear an equally strong resemblance to institutions more in keeping with the genius of the New World.

The few travelers who visit the country are generally content to revisit and describe places already known. This is not strange,

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considering the difficulties that have to be overcome.

The country swarms with savage Indians, who are jealous of the intrusions of strangers. We have, however, this consolation: those ruins already brought to light show such a uniformity of detail, that it is not probable that any new developments are to be expected. The ruins that are already known are sufficient to illustrate all the points of their architecture; and we can draw from them, doubtless, all that can be drawn from ruins, throwing light on the civil organization of the Mayas of Yucatan.

Illustration of Plan of Uxmal.----------

We can not do better than to describe some of the more important ruins, and then notice wherein others differ. Examining the map, we see that Uxmal is one of the first ruins that would meet us on arriving, in the country. It is more fully described than any other, though perhaps not of greater importance than those of some other localities. As at Palenque, while the principal ruins are said to be situated in a small area, the whole section abounds in mounds and heaps of *debris*, and it may well be said that buildings as imposing as those already described are

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concealed in the forest not far removed from the present ruins. A plat of ground seventeen hundred feet long by twelve hundred feet wide would include the principal structures now known.

The most imposing single edifice here is that called the Governor's House. The only reason for giving it this name is its size. Being of large size, and located on a terraced pyramid, it has received a name which may be very inappropriate. We will first notice the pyramid on which the building stands. At Palenque the pyramid rises regularly from the ground. Here the pyramid is terraced. In order to understand clearly the arrangement of these various terraces, we introduce this drawing. The base is a somewhat irregular figure, though nearly a square. Another pyramid cuts into one corner of the terrace. The first terrace is about three feet high, fifteen feet broad, and five hundred and seventy-five feet long. The second terrace is twenty feet high, two hundred and fifty feet wide, and five hundred and forty-five feet in length. The third terrace, on which the building stands, is nineteen feet high, and its summit platform is one hundred by three hundred and sixty feet. The height of this platform above the general surface is a little over forty feet.

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Illustration of Pyramid at Palenque.----------

The material of which the pyramid is composed, is rough fragments of limestone, thrown together without order; but the terraces were all faced with substantial stone work. At the time of Mr. Stephens's visit the facing of the second terrace was still in a good state of preservation. Charney believes the platform was paved with square blocks. This pyramid was not entirely artificial--they took advantage of a natural hill, as far as it went. No stairway or other means of ascent to the first terrace is mentioned. From its low height, probably none was needed. The second terrace being twenty feet high, some means of ascent was required. This was afforded, as seen in the drawing, by an inclined plane, at the south side one hundred feet broad. From the second terrace a grand staircase, one hundred and thirty feet wide, containing thirty-five steps, led up to the summit of the third terrace.

No buildings or other ornaments are mentioned as having been found on the lower terrace. The wide promenade of the second one supported some structures of its own, but they were in too

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dilapidated a condition to furnish a clear idea of their original nature, except in one instance--that is of the building at A of the drawing. This building was ninety-four feet long, thirty-four feet wide, and about twenty feet high.

The roof had fallen in, so that we do not know the arrangement of the rooms in the interior. The simplicity of ornaments on the outer wall is commented on. Instead of the complicated ornaments, so apparent on the buildings of Yucatan, the only ornament in this case was a simple and elegant line of round columns, standing close together, and encircling the whole edifice. At regular intervals on the upper cornice appeared a sculptured turtle. From this circumstance, the building was named "The House of Turtles." No steps lead to the terrace below or to the one above. "It stands isolated and alone, seeming to mourn over its own desolate and ruinous condition."

At B, along the south end of the terrace, there was a long, low mound of ruins, and arranged along its base was a row of broken columns about five feet high and nearly five feet in circumference. Some have supposed, from this, that columns extended along the entire promenade of the second terrace. This would indeed give it a very grand appearance; but there is

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no foundation for such a view. East of the central stairway at C, was a low, square inclosure. This contained a standing pillar, now in a slanting position, as if an effort had been made to throw it over. It was about eight feet above the surface of the ground and five below. The Indians called it a whipping-post. Mr. Stephens thinks it was connected with the ceremonial rites of an ancient worship. He found a similarly shaped stone in connection with other buildings at Uxmal, and at other places in Yucatan.

Illustration of Two-headed Monument, Uxmal.----------

Still further east, at D, he found a rude, circular mound of rough stones. On excavating this, he was rewarded by the discovery of a double-headed monument. It was carved out ot a single block of stone. The probabilities are that it was purposely buried when the natives abandoned Uxmal, to prevent the Spaniards from destroying it. Scattered about over this platform were found excavations much like well-made cisterns in shape. As it is something of a mystery where the inhabitants obtained water, it is a reasonable supposition that these were

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really cisterns. Similar excavations were discovered all over the area of the ruins.

Leaving the second terrace, and passing up the ruined stairway, we find ourselves on the summit platform of the third terrace, and see before us one of the long, low, richly ornamented buildings of Yucatan. This cut presents us an end view, but gives us a good idea of the building as a whole. It does not occupy the entire summit; there is a wide promenade all around it. Its length is three hundred and twenty-two feet; its width, thirty-nine feet, and its height twenty-six feet.

Illustration of End View.----------

In order to understand clearly the arrangement of the rooms, we will here give the ground-plan. The two end portions may have been additions to the original structure. There are, at any rate, reasons for supposing the small rooms in the two recesses of later construction. We must notice that we have here the usual three parallel walls and two rows of rooms. All the walls are massive, the rear wall especially so. It is nine feet thick

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throughout, and so are the transverse walls of the two recesses. Supposing the rear wall might contain rooms, Mr. Stephens made an opening through it. He found it to be solid.

Illustration of Ground Plan.----------

Illustration of Cross-sectiion of Uxmal.----------

The stones facing the walls and rooms are smooth and square, and the mass of the masonry consists of rough, irregular fragments of stone and mortar. This cross-section makes this meaning plain. We can but notice what an immense amount of useless labor was bestowed on the walls and ceilings of this building.

We gather more the idea of galleries excavated in a rocky mass, than of rooms inclosed by walls. The rooms are very plain; no attempt at decoration was observed. In one or two instances the remains of a fine coat of plastering was noticed.

"The floors were of cement, in some places hard, but by long exposure broken, and now crumbling under foot." The arches supporting the roof are of the same style as those at Palenque--that is, triangular,--though, in this case, the ends

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of the projecting stones were beveled off so as to form a smooth surface. At Palenque, we remember, the inequalities were filled with cement. Across the arches were still to be observed beams of wood, the ends buried in the wall at both sides.
The supposition is that they served to support the arches while building, and afterwards for the suspension of hammocks.

There are no openings for light and ventilation, consequently some of the rear rooms are both damp and dark. The lintels over each doorway were of wood. This was the common and ordinary material employed for lintels in Yucatan, though in one or two instances stone was used. They used for this purpose beams of zapote, a wood noted for its strength and durability. Some inner lintels still remain in place. The one over the central doorway of the outer wall was elaborately carved, the others were plain.

The outside of the building is also of interest to us. By a careful examination, we notice a cornice just above the doorway. The wall below the cornice presents a smooth surface of limestone, no traces of plaster or paint appearing; above the cornice the facade is one solid mass of rich, complicated, and elaborately sculptured ornaments. This is not stucco work, as at Palenque, but the ornaments are carved on stone. Mr Stephens

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tells us, "Every ornament or combination is made up of separate stones, each of which had carved on it part of the subject, and was then set in its place in the wall. Each stone, by itself, is an unmeaning fractional portion, but placed by the side of others, makes, part of a whole which, without it, would be incomplete."

It is not possible to give a verbal description of all of the ornaments; we can notice but few. Over each doorway was represented a person apparently seated on a sort of throne, having a lofty head-dress, with enormous plumes of feathers falling symmetrically on each side. Though the figures varied in each case, in general characteristics they were the same as the one here represented, which was the figure over the central doorway of the building.

Illustration of Figure over the Doorway.---------

Illustration of Ornament over the Doorway.----------

Among the most commonly reappearing ornaments at Uxmal, and at

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other places, is one that has received the name of the "Elephant's Trunk," and has given rise to no little discussion. One occurs immediately above the figure. Part of this ornament is represented in this plate. The central part of this figure, which appears as a plain band, is in reality a curved projecting stone, which, when looked at sideways, has the appearance given in this cut. Though requiring a little imagination, the majority of travelers see in this some monster's face. The eyes and teeth are seen in the first engraving. This projecting stone is the nose.

Illustration of Elephant's Trunk.----------

We stand in amazement before this sculptured facade. We must reflect that its builders were not possessed of metallic tools. It extends entirely around the building, though the end and rear walls are not as elaborately decorated as the front. A little calculation shows that it contains over ten thousand square feet of carved stone. The roof of the building was flat. It had been covered with cement. But vegetation had somehow acquired a foothold, and the whole is now overgrown with grass and bushes.

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Such is a brief description of this "casa." Hastening to ruins, it appeals powerfully to the imagination. It is a memorial of vanished times. We wonder what of the strange people that pressed up these stairs and entered these rooms? For many years it has been abandoned to the elements. Year by year portions of the ornamented facade fall. Though the walls are massive and the roof is strong, it is but a question of time when a low mound of ruins will alone mark its site.

Like the palace at Palenque, this structure has given rise to conflicting theories as to its use. While many of the writers on this subject claim that it was the residence of royalty, there are, on the other hand, those who think it is simply a communal house of village Indians, or the official house of the tribe.
In whatever light we shall ultimately view it, it is surely an interesting monument of native American culture. The labor necessary to rear the terraced pyramid, even though advantage was taken of a natural eminence, must have been great.
The building itself, though not of great dimensions, except in length, must have required the labor of a large number of Indians for a long time. For purposes of defense, the location, from an Indian point of view, was an excellent one, since with them elevation constitutes the principal means of defense.

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The terraces could be easily ascended from but one point, where an enemy could be easily resisted. In a general way, it may be regarded as a representative of Yucatan buildings, and so we will be able to more rapidly describe the remaining structures.

Illustration of Plan of Nunnery.----------

On the general plan we see, to the north of the structure we have just described, a group of ruins marked "C." This is regarded as the most wonderful collection of edifices in Yucatan, and as exhibiting the highest state of ancient architecture and sculpture in North America. They are known as the "Nunnery," which we think is a very absurd name. The pyramid on which they stood is also terraced, though on one side only. We give a drawing showing the position on the summit platform of the four buildings forming this group. Since we have so many ruined structures to describe, we must avoid such details as will prove tiresome. We will give in a note the dimensions of these buildings, and of the pyramid, and pass at once to some points of special interest.

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Traces of stairways are mentioned as leading up to the terrace, but none of the steps remained in place. The southern building is seen to have doors in both the court and terrace walls, but in this case the middle wall is unbroken. All the rooms of this building are single. In the plan it appears divided into two buildings; the opening is, however, but a triangular arched doorway, through which access was had to the court.

There is no one to dispute our right of way, and so, climbing up the ruined stairs, and passing through the deserted gateway, we emerge into a courtyard, now silent and deserted and overgrown with bushes and grass. It was once paved and covered with cement, and in the center are the remains of a stone pillar, similar to that in front of the governor's house. When the houses were all occupied this court must have presented an animated scene. But, now that the buildings are tenantless and going to ruin, it must impress all beholders with a sense of the changes wrought by time.

Illustration of Room in Nunnery.----------

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It will be noticed that the northern building does not stand in quite the same direction as the southern one, which detracts from the symmetry of the whole. It stands on a fourth terrace, twenty feet higher than the others. A grand, but ruined, staircase leads up the center of the terrace. At each end of this staircase built against the terrace, could be distinguished the ruins of a small building. There is one unusual feature about the ruins in the eastern building. In general, only two rooms open into each other. In this building, however, six rooms form one suite, and, furthermore, all the doorways of this suite are decorated with sculpture. As this suite of rooms was evidently a place of interest, we will introduce this illustration, which gives us a good idea of the appearance of the rooms on the inside. We would do well to compare this cut with that of the room in Pueblo Bonito (Chapter XI). The arched roof is not a true arch but simply the triangular arch we have already spoken of.

Illustration of Facade, Southern Building.-----

The principal attraction about these buildings is the beautiful

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facades which overlook the court-yard. They are pronounced by all to be the finest examples of native American art. With one exception, they are neither complicated nor grotesque, but chaste and artistic. As in the Governor's House, the part below the cornice is plain, but the remaining part, both front and rear, is covered with sculpture. On entering the court-yard from the arched gateway of the southern building, we notice that its facade is composed of diamond lattice-work and vertical columns, while over each doorway is something that resembles a house, with a human figure seated in a doorway. This cut represents but a small portion of this facade, but it gives us an idea of the whole.

Illustration of Facade, Eastern Building.---------

The facade of the eastern building was in the best state of preservation of any. We give a section of this also.
The ornaments over the doorway, shown in the cut, consist of three of those mysterious masks, with the projecting curved stone, already described. "The ornaments over the other doorways are less striking, more simple, and more pleasing. In all of

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them there is, in the center, a masked face, with the tongue hanging out, surmounted by an elaborate head-dress. Between the horizontal bars is a range of diamond-shaped ornaments, in which the remains of red paint are still distinctly visible, and at each end of these bars is a serpent's head, with the mouth wide open." It is necessary to examine the drawing attentively, to distinguish these features. Some think the masked face represents the sun.

Illustration of Serpent Facade, Western Building.--------

The western facade is known as the Serpent Facade. It was very much in ruins at the time of Mr. Stephens's visit. When entire, it must have been of great beauty. Two serpents are trailed along the whole front, and by the interlacing of their bodies divide the surface into square panels. In the open mouth of these serpents is sculptured a human head. The panels are filled with ornaments similar in design to those of the "Governor's House," and among the ornaments of each panel are found one or more human faces, while full-sized figures are not entirely absent. This cut represents but a small portion of the facade.

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It gives us, however, an idea of the whole. We notice, over the doorway again, the elephant's trunk ornament.

The northern building, standing high above the rest, on its own terrace, was doubtless intended to have the grandest front of all. It was, however, in such a ruined state, and the few remaining fragments so complicated, that no drawings have been given us. Human figures are represented in several places; two are apparently playing on musical instruments. We recall that at Palenque, the roof of some of the temples bears a curious two-storied work, erected apparently for ornamental purposes. The same instinct reappears in this building. At regular intervals along the front they carried the wall above the cornice, forming thirteen turret-like elevations ten feet wide, and seventeen feet high. These turrets were also loaded with ornaments. Another curious feature about this building is, that it was erected over, and completely inclosed, a smaller building of an older date. Wherever the outer walls have fallen, the ornamented cornice of the inner building is visible.

When we reflect on the patient labor that must have been expended on this pyramid and these buildings, we are filled with admiration for their perseverance and ingenuity. They had

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neither domestic animals or metallic tools. The buildings were massively built and richly ornamented. The sculptured portion covers over twenty-four thousand square feet. The terraced mound supporting the house contained over sixty thousand cubic yards of materials, though this may not be wholly artificial.
To our eyes, as these rooms had neither windows nor fire-places, they are not very desirable. But we may be sure that the builders considered them as models of their kind.

Leaving this interesting ruin, we will now visit one of the temples. This is east of the Nunnery, and is marked "D" on the plan. The mound on which this building stands is high enough to overlook the entire field of ruins. This cut represents the eastern side of the mound, up which a flight of stone steps lead to the building on the summit. There are some grounds for supposing a grander staircase, supported on triangular arches, led up the western side.

Illustration of Temple, Uxmal.----------

The building on the top is not large--only seventy-two feet

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long, and twelve feet wide--and consists of but three rooms, none opening into each other. The front of the building, though much ruined, presented an elegant and tasteful appearance. There seems to be no doubt that this temple was the scene of idolatrous worship; perhaps of human sacrifices. In a legal paper which Mr. Stephens saw at Meridia, containing a grant of the lands on which these ruins stand, bearing date 1673, it is expressly stated that the Indians at that time had idols in these ancient buildings, to which, every day, openly and publicly, they burned copal. Nor is there any doubt that this was the continuation of an old custom. In the end room of this temple are engraved two circular figures which, by some, are considered as proofs of the presence of Phallic worship.

The buildings we have described will give us a very good idea of the structures of this ancient city. We have described but a few of them, but we have now only space to make some general observations. We wish to point out some resemblances to the ruins at Palenque. In both, buildings that served as temples were not large, but of small dimensions, and contained but few rooms. They occupy the summits of high pyramids. Such was probably the building on the summit of the pyramid at "F" (see plan). The buildings on the top of this pyramid, like that just

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described, had but three rooms. A very large pyramid is seen at "E." Our information in regard to it is very meager. A square platform was found on the summit. It is not unreasonable to suppose that this platform was intended to support a temple. But, before it was erected, the presence of the Spaniards put an end to all native building. There are, however, no proofs to be advanced in support of this statement; it is a mere suggestion.

We think the House of the Nuns illustrates the general plan of building employed at both places. That is as follows: They first erected a rectangular pyramid or mounds often terraced. Buildings were then put up parallel to the four sides, thus inclosing a court. At Palenque this court, as we have seen, was built over. Besides the House of Nuns, there are several other instances at Uxmal of courts with buildings on their sides. Looking at the plan, we see one at "G," and a still more ruined one between that and "F." Such a court, with traces of ruined buildings, also exists between the nunnery and the temple, at "D." It is not improbable that groups of low ruins existing to the westward of the structures described would be found, on examination, to reveal the same arrangements.

As for the grand terraced pyramid supporting the Governor's

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House, it may well be that other buildings would have been added in process of time, as population increased. It is not necessary to suppose they erected all the buildings around a court at once. It seems very reasonable to suppose the northern building of the House of Nuns the oldest. The direction is not quite the same as the others; it stands on a higher terrace; and, furthermore, the present exterior walls are simply built around the older building. It may be, however, that the great terraced mound of the Governor's House was intended to support but one building. As there is the best of reason for supposing that Uxmal was inhabited at the time of the conquest, there is nothing to forbid the conclusion that the erection of pyramids, temples, and buildings was still going on.

Hieroglyphics, which formed such an interesting feature at Palenque, are here almost entirely wanting. A few rows occur around the head of the figure over the principal doorway of the Governor's House. They are of the same general character as those already described, but are "more rich, elaborate, and complicated." As to the probable antiquity of these ruins, we must defer consideration until we become more acquainted with the ruins of Yucatan.

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The places we have now described will make us acquainted with the general character of the ruins scattered all over Yucatan. We do not feel as if we would be justified in dwelling at any great length over the remainder, though one or two important places must be mentioned. A word as to the frequency with which the ruins occur. We want to repeat that Yucatan, even to this day, is far from being thoroughly explored. Almost our only source of information is the writings of Mr. Stephens. But he only described a few places. In a trip of thirty-nine miles he took in a westerly direction from Uxmal he saw no less than seven different groups of ruins. Some of these, though in a very dilapidated state, presented points of great interest. When he started he knew of but few of those ruins. Some he heard of quite by accident while on his way, and some he first saw as he journeyed along the road. We must suppose the whole country equally well supplied.

After he had left Uxmal for good, at the village of Nochahab (see map), a little inquiry brought him information of so many ruins that he did not have time to visit them all. As to the question of use to which these buildings were applied, we must either suppose they had an immense number of temples and palaces--one or the other every few miles--or else they were the

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residences of the people themselves. And, though it may seem very strange that an imperfectly developed people should ornament so profusely and delicately their ordinary places of abode, yet it is difficult to understand why they should rear such an abundance of temples and palaces.

At Kabah (see map) Mr. Stephens found a most interesting field of ruins, rivaling Uxmal in extent, if not surpassing it. One group of buildings, arranged much like the House of Nuns, has some interesting features about it. The highest terrace in this case is nearly square, and the building on its summit is nearly the same shape. We have here two rows of double rooms, separated by a middle wall, very massive, as if two of the typical Maya buildings had been placed back to back. The front of this building was elaborately ornamented. In all the buildings at Uxmal the part above the cornice only was ornamented. Here the entire front was covered with carved stone. To make room for further ornaments the roof bore an additional appendage, like the second story of the Palenque temples. This building must have presented a wonderful appearance when entire.

Another feature at this place has reference to the pyramid.

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We are familiar with the idea of a terraced mound supporting buildings. In one of these Kabah structures the buildings are arranged in a different and suggestive way. That is, the pyramid was terraced off. There were three ranges of buildings, the roof of one range forming a promenade in front of the other.
In another of the Kabah structures was found a wooden lintel, elegantly carved. Mr. Stephens tells us the lines were clear and distinct, and the cutting, under any test, and without any reference to the people by whom it was executed, would be considered as indicating great skill and proficiency in the art of carving on wood. At the expense of a great deal of hard work, he succeeded in getting this lintel out and removed to New York, where it was unfortunately destroyed by fire.

They worked stone to better advantage at Kabah than at Uxmal. For the first time we meet with lintels of stone and a doorway with carved jambs. The lintels were supported in the center by a pillar. The pillars were rude and unpolished, but they were not out of proportion, and, in fact, were adapted to the lowness of the building. We will only mention one more structure. This is a lonely arch, of the same form as all the rest, having a span of fourteen feet. It stands on a ruined mound, disconnected from every other structure, in solitary grandeur. "Darkness rests

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upon its history, but in that desolation and solitude, among the ruins around, it stood like the proud memorial of a Roman triumph." There was the usual pyramid with a temple. In a plan given of the field of ruins seventeen groups are seen, and, withont a doubt, many more exist in the immediate forest.

Illustration of Arch, Kabah.----------

M. Charney has of late years made a discovery which conclusively shows that this was an inhabited place at the time of the conquest. In a room as ruined as the rest he discovered the stueeo'figure of a horse and its rider. They are formed after the Indian manner by an inexperienced hand guided by an over-excited imagination. Both figures are easily recognized. The horse has on its trappings. We can see the stirrups. The man wears his cuirass. We all know what astonishment the appearance of men on horseback produced among the Indians, and so we are not at a loss to divine the cause which led to the construction of this figure. We must remember Mr. Stephens was hurried for time. Portions of this figure were mutilated, and other portions had been covered over by a layer of stucco, which Charney had to

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remove before the figure could be distinctly made out.

Illustration of Zayi.----------

Within a radius of ten miles from Kabah are located no less than six so-called cities. The general appearance of all is the same--low ranges of buildings on terraced mounds, and ornamented facades. One of these places, by the name of Zayi, is of interest to us, because it gives us a hint as to how these people constructed their buildings. Amongst other buildings they found one large terraced mound, with buildings arranged on it in a very significant manner. There were three ranges of buildings, one over the other--the roof of one range on a level with the foundation of the range above. A grand stair-way led up the mound. This feature is illustrated in the plate opposite. We can imagine what a grand appearance must have been presented by this great terraced mound, when its buildings were all perfect.

Illustration of Plan of Zayi. (Bureau of Ethnology.)----

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The plan of this mound and buildings is shown in the last cut. Ten rooms on the north side of the second range presented a curious feature. They were all filled up with a solid mass of stone and mortar, and this filling up must have gone on as fast as the walls rose, and the arched ceiling must have closed over a solid mass. A very reasonable explanation is given of this state of things by Mr. Morgan. He considers that such was the rudeness of mechanical knowledge among these people that the only way they could construct their peculiar arched roof was to build it over an internal core of masonry. Once put together over such a core, and carried up several feet, the down weight of the arch would articulate and hold the mass together. Then the core of masonry would be cleaned out, and the room was ready for use. If this be true, it follows that these rooms were the last erected. They were not yet cleared out when the operations of the Spaniards put an end to all native building. We must notice the structures at Zayi are in as ruined a condition as the others--thus strengthening the conviction that their abandonment was at about the time of the conquest of the peninsula.

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We have not space to follow Mr. Stephens in all his journey. Every few miles he came across one of these peculiar structures. A common design is apparent in all; but all are alike enveloped in mystery. At Labna he found an extensive field of ruins, equal in importance to any in Yucatan. The next illustration represents an arched gateway, which reminds us of that in the "House of Nuns." Passing through this he found himself in a ruined court-yard, fronting which were the remains of buildings; but this was only one of many groups of ruins, and Labna was but one of many places visited. At Labphak Mr. Stephens found "the tottering remains of the grandest structure that now rears its ruined head in the forests of Yucatan." This was a terraced mound, faced by buildings on three sides, leaving an immense stair-way occupying the fourth side.

Illustration of Gateway at Labna.----------

Small interior stair-ways are mentioned in this building, but no particular description is given of them. At two places sculptured tablets were found. These tablets are worthy of notice. They were the only ones Mr. Stephens found, except at

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Palenque. It will be seen, on the map, that this ruin is nearer Palenque than any of the places in Yucatan yet described. Stucco ornaments, so apparent at the latter place, were now becoming numerous again. At Uxmal stone for building could be had in the greatest abundance--it was not as plenty here. The builders, apparently, adapted their ornamentation to the material at hand; and, while at Palenque they employed stucco in ornament, at Uxmal they carved stone.

We must now leave this interesting section of Yucatan, though only a few places have been mentioned. The reader is well aware of the difference of opinion with which these ruins are viewed. Some of them are unquestionably temples. If we regard the others as palaces and the public buildings of great cities, we are at once puzzled to account for their great numbers. If we look on the majority of them as communal residences of the inhabitants, we are amazed at the mass of decorations with which they are adorned. But our admiration stops there--we are accustomed to speak of them as stately edifices. This is owing to their exterior ornaments, and their position on terraced mounds. The houses are often of great length, but not striking in other regards. The rooms, in the majority of cases, are small, low, dark, and ill ventilated. A great amount of useless labor was

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bestowed upon the walls, which were unnecessarily massive.

Near the center of the northern part of the peninsula is seen a place marked Chichen, to which is generally added the word Itza, making the entire name of the place Chichen-Itza. In this case the ancient Maya name has come down to us with the ruins--Chichen meaning the "mouth of wells," having reference to two springs which supplied the place with water. Itza is the name of a branch of the Maya people. This place is of interest to us in several ways. It was, unquestionably, a renowned city in aboriginal times. Here the Spaniards met with a very severe repulse. As a ruin it attracted the attention of early writers, and it has been the subject of antiquarian research in recent times. The description of the buildings will not detain us long. They are, evidently, the work of the same people as those whose structures we have already described.

One of the most important buildings is known as the Nunnery, reminding us at once of the collection of buildings of that name at Uxmal. In this case, however, the pyramid is represented by a solid mass of masonry one hundred and twelve by one hundred and sixty feet, rising with perpendicular sides to the height of thirty-two feet. This is seen to be a departure from the method

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of constructing pyramids hitherto described. The proprietor of the estate on whose grounds these ruins are located used this mound as a stone-quarry. An excavation of thirty feet revealed no secret chambers.

The probabilities are that it is solid throughout. A grand staircase, fifty-six feet wide, leads up to the top of this mound. Mr. Stephens tells us that three ranges of buildings occupied the summit, and his drawings represent the same. The roof of the one forms a promenade in front of the one above. So each range of buildings rests on a foundation solid from the ground. Mr. Bancroft describes this mound as having but two ranges of buildings on the summit. Of these buildings the second range was, seemingly, the most important. Several of its rooms contained niches in the back wall, extending from floor to ceiling. From traces still visible, they were once covered with painted ornaments. One of the rooms was fifty-seven feet long and nine wide.

In the rear wall of this room were nine of these niches. "All of the walls of this room, from the floor to the peak of the arch, had been covered with painted designs, now wantonly defaced, but the remains of which present colors, in some places, still

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bright and vivid; and among these remains detached portions of human figures continually reappear, well drawn, the heads adorned with plumes of feathers and the hands bearing shields and spears." To this pile of masonry, at one end, a wing had been attached. This building was similar in design to other buildings in Yucatan. Theoretically we would expect this wing to be much later in time than the buildings on the mound. That it is so, is proven by the fact that in two rooms the internal core of masonry, as described at Zayi, had not been wholly removed.

We have noticed in all these structures, the builders first threw up a mound or pyramid to support the building. In one of the Chichen edifices the earth had been excavated from all around it, so as to still present the appearance of a mound. Perhaps the most prominent object at this place is a stately pyramid, with an imposing building, represented in the plate opposite. The mound itself is nearly two hundred feet square, and rises to the height of seventy-five feet. On the west and north sides are ruined staircases.

Illustration of Castillo, Chichen-Itza.--------

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On the ground, at the foot of the stairway on the north side, "forming a bold, striking, and well conceive commencement to this lofty range, are two colossal serpents' heads, ten feet in length, with mouths wide open, and tongues protruding. No doubt they were emblematic of some religious belief, and, in the mind of an imaginative people passing between them, to ascend the steps, must have excited feelings of solemn awe." The temple on the summit of this pyramid has some peculiar features about it. It is nearly square--forty-three by forty-nine feet--only one door in each side. In the room within, instead of partition walls supporting arches, were two immense beams, resting on square pillars, and supporting two arches--the only instance in the ruins of Yucatan of such use of beams.

Illustration of Gymnasium, at Chichen-Itza.----------

We now wish to speak of one class of ruins which are present at Uxmal, but which we did not describe. They are two parallel walls. On the plan of Uxmal they are noticed between the Governor's House and the House of Nuns. This illustration

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represents this feature. These walls are each two hundred and seventy-four feet long, thirty feet thick, and twenty-six feet high. The distance separating them is one hundred and twenty feet. About one hundred feet from the north end, is seen a building fronting the open space between the walls. A building stood in a like position at the south end. In the cut a stone ring is seen projecting from each side. On the rim and border of these rings were sculptured two serpents, represented below. The general supposition is that this structure was used in the celebration of public games. Mr. Stephens refers us to the writings of Herrera, an early historian, for a description of a game of ball played at Mexico, where the surroundings must have been much the same as is here represented.

Illustration of Ring.----------

Most of the structures in Yucatan have been left in undisturbed quiet since the visit of Mr. Stephens. Five years after his visit, the Indians rose in revolt, and a large portion of country through which he traveled in perfect safety has, since then, been shunned by cautious travelers. As he says, "For a

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brief space the stillness that reigned around them was broken, and they were again left to solitude and silence." At Uxmal, and some places near the coast, more recent travelers have investigated the ruins, wondered over them, and passed on, without materially adding to our knowledge respecting them.
In 1873 a French scientists Dr. A. Le Plongon, accompanied by his wife, visited Yucatan for the purpose of exploring the ruins. They spent a year in Meridia, thoroughly studying the customs of the country, and preparing for work.

Their first field of work was this ancient city, Chichen-Itza.
As a result, he lays before us a picture of life and times not only vastly remote from us, but surpassing in wonder any thing hitherto presented. In the field of American antiquities we need scarcely be surprised at whatever conclusions are presented to us. We believe, however, we are not too harsh in saying that scholars, as a rule, consider Le Plongon as too much carried away by enthusiasm to judge coolly of his discoveries.
The most important part of his discoveries seem to have been in the buildings in connection with the Gymnasium last described.

At the time of the Spanish conquest, a very common tradition among the natives was that, in ancient times, three brothers

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governed the country. This legend of three rulers in olden times, was not peculiar to the Mayas, but was found among all the Indian nations of Central America. In our opinion this last statement at once shows we have here to deal with a question belonging to mythology and not to history. But M. Le Plongon considers the buildings at Chichen, especially those of the Gymnasium, illustrative of the lives of the three brothers, and of the queen of one of them. In brief, he tells us the names of these three brothers were, Chaac-mol, Huuncay, and Aac. The first of these, Chaac-mol, means Tiger King. It was he who raised Chichen-Itza to the height of its glory. M. Le Plongon would have us believe that the merchants of Asia and Africa traded in its marts, and that the wise men of the world came hither to consult with the H-men, whose convent, together with their astronomical laboratory, is still to be seen. Aac was the younger brother of the three. He conspired against the life of Chaac-mol, and finally killed him. The queen of Chaac-mol then erected the buildings around the Gymnasium as his memorial.

Illustration of Building at end of Gymnasium.----------

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At the south end of the eastern wall Mr. Stephens noticed two ruined buildings, an upper and a lower one, of which our next cut is a representation. He was struck with the remains of painting, which entirely covered the walls. He tells us the walls were everywhere covered with designs in painting, representing, in bright and vivid colors, human figures, battles, houses, trees, and scenes of domestic life. We give, in a plate, detached portions of these figures. We must understand that, in the original, these were beautifully colored.
The colors used were "green, yellow, red, blue, and reddish brown, the last being invariably the color given to human flesh."

Illustration of Painted Stucco-work.----------

M. Le Plongon contends that these paintings represent scenes in the lives of the three brothers and the Queen of Chaac-mol, "in the funeral chamber." Says he: "The terrible altercation between Aac and Chaac-mol, which had its termination in the murder of the latter by his brother, is represented by large figures three-fourths life size." And in another place he tells us:

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"The scenes of his death is impressively portrayed on the walls, which the queen caused to be raised to the memory of her husband, in the two exquisite rooms, the ruins of which are yet to be seen upon the south end of the east wall of the Gymnasium. The rooms were a shrine where the conjugal love of the queen worshiped the memory of her departed lover. She adorned the outer walls with his effigies, his totem-tiger, and his shield and coat-of-arms between tiger and tiger; whilst on the admirably polished stucco, that covers the stones in the interior of the rooms, she had his deeds--his and her own life, in fact--painted in beautiful, life-like designs, superbly drawn, and sweetly colored."

He tells us further, that Aac, after the commission of his crime, fled to Uxmal for protection, where he built the edifice described as the "Governor's House." The seated figures over the central door-way (see Illustration of Figure over Doorway, earlier), he says, represents Aac. In the hieroglyphics around the head he finds the name. Although neither Mr. Stephens nor the other travelers mention any thing of the kind, he says that, under the feet of this figure, "are to be seen the bodies of three figures, two men and one woman, flayed." Though the figures are headless, he has no doubt but that they represent

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Huuncay, Chaae-Mol, and the queen, his wife. We are further told that the ruined structure on the second terrace, called the "House of Turtles," was Aac's private residence.

Illustration of Queen consulting the H-men.-------

This wonderful story of the lives and adventures of the three brothers was revealed to the doctor by a careful study of the detached painting mentioned by Mr. Stephens. One of the paintings which served him so good a turn is shown in the cut above, which he considers represents the queen, when a child, consulting one of the wise men as to her future destiny.

Perhaps as interesting a portion of his discoveries as any, is finding sculptured figures of bearded white men on the pillars of the temple, and painted on the walls of Chaac-mol's chambers. He thinks they have Assyrian features. He also claims to have discovered figures having true Negro features.

As to the antiquity of this city he readily figures up nineteen thousand years; but this did not take him to the beginning.

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He arrives at this estimate in this way: To the north-east of the pyramid, we have described, are to be seen rows of small columns, which have excited the curiosity of all who have seen them. Mr. Stephens represents them in four rows, inclosing a rectangular area. M. Le Plongon says they surrounded three sides of a terraced pyramid, which once supported the main temple of the city. Mr. Stephens has no suggestions to offer as to their use.

Le Plongon claims they were used to measure time, and quotes from old authors to the effect, that each stone in them stands for twenty years; and, as there is always just eight stones in a column, each column means one hundred and sixty years. He counted one hundred and twenty of these columns--and then, as he says: "Got tired of pushing my way through the nearly impenetrable thicket, where I could see many more among the shrubs." From this number he computes nineteen thousand two hundred years.

What shall we say to this story that M. Le Plongon brings us of ancient Maya civilization? It is unquestioned that he has expended a great amount of patient labor in his work, has braved many dangers, and is thoroughly in earnest. He has also spent

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years in the field, and ought to be well qualified to judge of the ruins. We believe, however, he is altogether wrong in his conclusions. The keystone of his discoveries--the one on which he relies to prove the accuracy of his methods--fails him.

This was the discovery of the statue of Chaac-mol himself, which is here represented. He claims to have found it as the result of successfully rendering certain mural tablets in the funeral chamber, but a careful reading of his own account of the affair leaves us under the impression that the "instincts of the archaeologist" had as much to do with it as any thing else.

Illustration of Chaac-mol.----------

Be that as it may, he certainly did find this statue buried in the ground. He is very positive it is Chaac-mol, claiming to have read the name readily in hieroglyphics on the ear-tablets. He says: "It is not an idol, but a true portrait of a man who has lived an earthly life. I have seen him represented in battle, in council, and in court receptions. I am well acquainted with his life, and the manner of his death."

This statue was seized by the Mexican Government, and taken to

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Mexico. Here a curious discovery was made. Another statue similar to this was already in the museum. This latter had been found not far from Mexico. Since then, still a third, smaller than the others, but evidently representing the same personage, has been discovered. In short, it has been shown that this is an idol, worshiped as well by the Aztecs as by the Mayas, and, instead of being buried, as Le Plongon asserts, five thousand years ago, we have not much doubt it was buried to prevent its falling in to the hands of the Spaniards.

Illustration of Bearded Itza.----------

As to the antiquity with which Le Plongon would clothe Chichen, if his method be right, he has not more than made a beginning. Mr. Stephens counted three hundred and eighty of these same columns, and tells us there were many more. We know no good reason for supposing Chichen was not inhabited at the time of the conquest. The wooden beams and lintels in the temples have not yet decayed, and the masonry had not been cleaned out of some of the rooms. On this point we wish to make a suggestion, a mere hint. The pillars that supported the arches in the temple

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mentioned some pages back were covered with sculpture. Amongst some others, but very faintly represented, was the preceding figure of a bearded man. May it not be that it represents a Spaniard? We must recall the stucco figure of the horse and its rider at Kabah. It seems to us a reasonable suggestion that they should carve on the pillars of their temples representations of the Spaniards, for the Spaniards were twenty-five years in gaining a permanent foothold in Yucatan, and during that time the Indians would continue to build and ornament as before.

Illustration of Arizona Ruin.----------

REFERENCES

(1) Bancroft: "Native Races," Vol. V, p. 78.

(2) Stephens's "Incidents of Travel in Central America, Chiapas, and Yucatan," Vol. I, p. 113, *et seq.*

(3) Bancroft's "Native Races," Vol. IV, p. 95.

(4) "Report of Bureau of Ethnology," Vol. I. Mr. Holden's article.

(5) Fourteen years later, these ruins were visited and described

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by an Austrian traveler, Dr. Scherzer. His account, though much more complete than Mr. Stephens's, has not yet appeared in English. Mr. Bancroft, in "Native Races," Vol. IV, p. 118, *et seq.,* gives a *resume* of all information known as to these ruins.

(6) "Central America," Vol II, p. 122. We are not sure about this inclosure. But Mr. Catherwood mentions a wall, and we are told the ruins are, in all respects, similar to those of Copan.

(7) For full information consult Bancroft's "Native Races," Vol. IV, pp. 115 to 139.

(8) "Central America," Vol. II, pp. 152-3.

(9) Brasseur De Bourbourg styles Fuentes's description of Copan "La description menteuse de Fuentes." Bancroft: "Native Races," Vol. IV, p. 80, note.

(10) Charney, in *North American Review,* 1881.

(11) "Native Races," Vol. IV, p. 300, *et seq.*

(12) Morgan's "Contribution to N.A. Ethnology," Vol. IV, p. 268.

(13) Bancroft's "Native Races," Vol. IV, p. 319.

(14) Armin: "Das Heute Mexico."

(15) "Native Races," Vol. IV.

(16) Bancroft's "Native Races," p. 326.

(17) Short's "North Americans of Antiquity," p. 389.

(18) Holden, in "First Annual Report of the Bureau of Ethnology."

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(19) Brasseur De Bourbourg.

(20) "Myths of the New World."

(21) Holden, in "First Annual Report Bureau of Ethnology."

(22) This tablet is named after its discoverer. The building in which it is situated was but a short distance from the others; yet, owing to the density of the forest, neither Waldeck nor Stephens discovered it. A cast of it is now in the National Museum at Washington.

(23) Rau, in "Smithsonian Contribution to Knowledge," Vol. XXII, p. 40.

(24) "Myths of the New World," p. 95.

(25) Bancroft's "Native Races," Vol. V, p. 506.

(26) See, also, "American Encyclopedia," Art. "Cross."

(27) "Conquest of Mexico," p. 160.

(28) "Smithsonian Contribution to Knowledge," Vol. XXII.

(29) Bancroft's "Native Races," Vol. III, p. 470.

(30) "Annual Report of the Bureau of Ethnology," Vol. I.

(31) Mr. Holden uses, as an important link in his arguments, a figure engraved on a chalchiute (a sacred stone). He concludes it to be a representative of Huitzilopochtli, the god of war, or rather the Maya representative of the Mexican god of that name. It is unfortunate that Prof. Valentine gives to this same figure a different significance. In the "Proceedings of the American

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Antiquarian Society," for April, 1884, in a paper on that subject, he concludes it to be a representation of a victorious warrior giving sacrifice to his god. The only persons entitled to speak on such subjects are those thoroughly acquainted with Maya Archaeology.

(32) Huitzilopochtli.

(33) Tlaloc.

(34) Bancroft's "Native Races," Vol. III, p. 324.

(35) While such seem to us to be the results of Mr. Holden's labors, it must not be understood that he vouches for them. They must be regarded as personal views which we express with some mental forebodings. In this matter we must abide by further investigations.

(36) Bandelier: "An Archaeological Tour in Mexico," p. 184.

(37) Bancroft's "Native Races," Vol. IV, p. 345.

(38) See Charney, in *North American Review,* 1881. They wore formerly in a house.

(39) Bancroft's "Native Races," Vol. IV, p. 332.

(40) Brinton's "Contribution to North American Ethnology," Vol. V, p. 36. "Introduction to Study of Manuscript Troano," by Prof. Thomas.

(41) *North American Review,* February, 1881, p. 187.

(42) Bancroft's "Native Races," p. 287.

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(43) "Central America," Vol. II, p. 261. At this time Mr. Stephens had not seen the ruins at Palenque, and those in Yucatan.

(44) Pronounced "oosh-mal."

(45) Our principal authority on the ruin's of Yucatan is Mr. Stephens, whose work, "Incidents of Travel in Yucatan," in two volumes, is all that can be desired. Mr. Bancroft, in "Native Races," Vol. IV, has gathered together whatever of worth there is in the writings of various explorers.

(46) Mr. Stephens thinks they were for the support of the arches, while building. As, however, it is almost certain they constructed this arch over a solid cove of masonry, which they afterwards removed (see "Contributions to N.A. Ethnology," Vol. IV, p. 262), they could not have been intended for such use.

(47) The pyramid is three hundred and fifty feet square at the base and nineteen feet high. The terraces are along the south side. The lowest terrace is three feet high and twenty feet wide. The second is twelve feet high and forty-five feet wide. The third is four feet high and five feet wide. The building on the south side is two hundred and seventy-nine feet long, twenty-eight feet wide, and eighteen feet high. The north one is two hundred and sixty-four feet long, twenty-eight feet wide,

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and twenty-five feet high. The eastern one, one hundred and fifty-eight feet long, thirty-five feet wide, and twenty-two feet high. The western one, one hundred and seventy-three feet long, thirty-five feet wide, and twenty feet high. (Bancroft's "Native Races," Vol. IV, p. 174.) The area of the court is two hundred and fourteen feet by two hundred and fifty-eight feet. It is about two and a half feet lower than the buildings on the eastern, western, and southern sides. There are seventy-six rooms in the four ranges of buildings, and twelve more in the facings of the terrace of the north building, to be described. In size the rooms vary from twenty to thirty feet long by from ten to twelve feet wide.

(48) Bancroft: "Native Races," Vol. IV, p. 179.

(49) The dimensions of this mound are as follows: Length of base, two hundred and thirty-five feet; width of base, one hundred and five feet; height, eighty-eight feet. Though diminishing as it rises, it is not exactly pyramidal, but its corners are rounded. It is incased with stone, and is apparently solid from the plain.--Stephens's "Yucatan," Vol. I, p. 316.

(50) See "Proceedings Am. Antiq. Society," April, 1880, p. 57.

(51) *North American Review*, 1882.

(52) "Contributions to North American Ethnology," Vol. IV, p. 267.

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(53) Stephens's "Yucatan," Vol. II, p. 164.

(54) Short's "North Americans of Antiquity," p. 396; Charney: *North American Review*, October, 1880.

(55) "Proceedings Am. Antiq. Society," Oct., 1878, p. 73.

(56) Learned men of the Mayas.

(57) American Antiquarian Society, October 1878.

(58) The tigers can be seen on the engraving of the gymnasium.

(59) Proceedings American Antiquarian Society, April, 1877, p. 97.

(60) Proceedings American Antiquarian Society, April, 1877, p. 101.

(61) M. Le Plongon interprets the curved figures issuing from the throat of the wise-man. In the original, different parts of this figure were of different colors. The doctor frankly tells us, that "imagination does the greater part of the work" in his interpretation.

(62) "Guided, as I have said, by my interpretations of the mural paintings, bas-reliefs, and other signs, ... I directed my steps, perhaps inspired by the instincts of the archaeologist, to a dense part of the thicket." Proceedings Am. Antiq. Society, April, 1877, p. 85.

(63) *North American Review*, October, 1880. And yet there are indications that this is a statue. See Bandelier's

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"Archaeological Tour in Mexico," p. 74.

(64) Stephens's "Yucatan," Vol. II, p. 318.

END OF CHAPTER XIV.**********

The Prehistoric World: or, Vanished Races

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Chapter XV.

THE CULTURE OF THE CIVILIZED TRIBES.

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Different views on this question--Reason for the same--Their architecture--Different styles of houses--The communal house--The tecpan--The teocalli--State of society indicated by this architecture--The gens among the Mexicans--The phratry among the Mexicans--The tribe--The powers and duties of the council--The head chiefs of the tribe--The duties of the "Chief-of-men"--The mistake of the Spaniards--The Confederacy--The idea of property among the Mexicans--The ownership of land--Their laws--Enforcement of the laws--Outline of the growth of the Mexicans in power--Their tribute system--How collected--Their system of trade--Slight knowledge of metallurgy--Religion--Quietzalcohuatl--Huitzilopochtli--Mexican priesthood--Human sacrifices--The system of Numeration--The calendar system--The calendar stone--Picture writing--Landa alphabet--Historical outline.

A landscape presents varied aspects according to the standpoint from which it is viewed. Here we have a glimpse of hill and dale; there a stretch of running water. But two persons, standing in the same position, owing to their different mental temperaments, will view things in a different light. Where one, an artist born, is carried away with the beautiful scenery, another, with a more practical turn of mind, perceives only its

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adaptability for investments. Education and habits of life are also very potent factors in determining our views on various questions. Scholars of wide and extended learning differ very greatly in their views of questions deeply affecting human interests. We know how true that is of abstruse topics, such as religion and questions of state polity. It is also true of the entire field of scientific research. The unknown is a vastly greater domain than the known, and men, after deep and patient research, adopt widely different theories to explain the same facts.

It need, therefore, occasion no surprise to learn that there is a great difference of opinion as to the real state of culture among the so-called civilized tribes of Mexico and Central America. We have incidentally mentioned this difference in describing the ruins and their probable purpose. As one of the objects we have in view, and perhaps the most important one, is to learn what we can of the real state of society amongst the prehistoric people we treat of, it becomes necessary to examine these different views, and, if we can not decide in our own minds what to accept as true, we will be prepared to receive additional evidence that scholars are now bringing forward, and know to how weigh them and compare them with others.

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It has only been within the last few years that we have gained an insight into the peculiar organization of Indian society. After some centuries of contact between the various tribes of Indians and whites, their social organization was still unknown. But we are now beginning to understand this, and the important discovery has also been made that this same system of government was very widely spread, indeed. This subject has, however, been as extensively treated as is necessary in chapter xii, so we need not stop longer. But if, with all the light of modern learning, we have only lately gained a clear understanding of the social organization of Indian tribes, it need occasion no surprise, nor call for any indignant denial, to affirm that the Spaniards totally misunderstood the social organization of the tribes with which they came in contact in Mexico.

We must also take into consideration the political condition of Europe at this time. Feudalism still exercised an influence on men's minds. The Spanish writers, in order to convey to Europeans a knowledge of the country and its inhabitants, applied European names and phrases to American Indian (advanced though they were) personages and institutions. But the means employed totally defeated the object sought. Instead of

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imparting a clear idea, a very erroneous one was conveyed.

As an illustration of this abuse of language, we might refer to the case of Montezuma, which name itself is a corruption of the Mexican word "Motecu-zoma," meaning literally "my wrathy chief." Mr. Bandelier and Mr. Morgan have quite clearly shown what his real position was. His title was "chief of men." He was simply one of the two chief executive officers of the tribe and general of the forces of the confederacy. His office was strictly elective, and he could be deposed for misdemeanor. Instead of giving him his proper title, and explaining its meaning, the Spaniards bestowed on him the title of king, which was soon enlarged to that of emperor, European words, it will be observed, which convey an altogether wrong idea of Mexican society. Many such illustrations could be given.

The literature that has grown up about this subject is very voluminous, but the authors not being acquainted with the organization of Indian society, have not been able to write understandingly about them. We do not flatter ourselves that we have now solved all the difficulties of the case. But since Mr. Morgan has succeeded in throwing such a flood of light on the constitution of ancient society, and especially of Indian

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society, and Mr. Bandelier has given us the results of his careful investigation of the culture of the Mexicans, we feel that a foundation has been laid for a correct understanding of this vexed problem.

We will now examine their architecture, or style of building. In dealing with prehistoric people, we have several times referred to the tribal state of government, involving village life and communism in living. We have seen how this principle enabled us to understand the condition of Europe during the Neolithic Age. In still another place we have used this principle to show the connection of the Pueblo Indians and other tribes of the United States. Now we think this is the key which is to explain many of the ruins we have described in the preceding chapter. But another principle to be borne in mind, is that of defense. War, we have seen, is really the normal state of things amongst tribal communities. Therefore, either some position naturally strong must be selected as a village site, or the houses themselves must be fortified, after the fashion of Indians. This will be found to explain many peculiarities in their method of construction.

Amongst the pueblo structures of to-day, and among the ruins of

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the cliff-dwellers, we have seen how compact every thing was. The estufa, or place of council and worship, was built in close proximity to the other building, and sometimes it formed part of it, and we do not learn that there was any thing distinguishing about the apartments of the chief. Further South a change is noticed. A specialization of structures, if we may use such an expression, has taken place, and, among the Mexicans, three kinds of houses were distinguished. It is extremely probable the same classification could be made elsewhere. There was, first of all, the ordinary dwelling houses. Every vestige of aboriginal buildings in the pueblos of Mexico has long since disappeared, and our knowledge of these structures can only be gathered from the somewhat confused accounts of the early writers.

Many, perhaps most, of the houses had a terraced, pyramidal foundation. Some were constructed on three sides of a court, like those on the Rio Chaco, in New Mexico. Others probably surrounded an open court, or quadrangle. The houses were of one and two stories in height. When two stories, the upper one receded from the first, probably in the terraced form.
As serving to connect them with the more ornamental structures in Yucatan, we are told they were sometimes "adorned with elegant cornices and stucco designs of flowers and animals,

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which were often painted with brilliant colors. Prominent among these figures was the coiling serpent." After pointing out, by many citations, that the evidence always was that these houses were occupied by many families, Mr. Morgan concludes, "They were evidently joint tenement-houses of the aboriginal American model, each occupied by a number of families ranging from five and ten to one hundred, and perhaps, in some cases, two hundred families in a house."

We can discern this kind of dwelling-house in many of the descriptions we have given of the ruins in the preceding chapter. M. Charney evidently found them at Tulla and Teotihuacan. Mr. Bandelier concludes that similar ruins once crowded the terraces at Cholula, and that to this class belongs the ruins at Mitla. The Palace, at Palenque, is evidently but another instance, as well as the House of Nuns, at Uxmal. In fact, with our present knowledge of the pueblos of Arizona, and the purposes which they subserved, as well as the uses made of such houses by the Mexicans, we are no longer justified in bestowing upon the structures in Yucatan the name of palaces.

The mistake was excusable among the Spaniards. They were totally ignorant of the mode of life indicated by these joint

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tenement-houses. When they found one of these large structures, capable of accommodating several hundred occupants, with its inner court, terraced foundation, and ornamented by stucco work, or sculpture, it was extremely natural that they should call it a palace, and cast about for some titled owner.

A second class of houses includes public buildings. The Mexicans, when at the height of their power, required buildings for public use, and this was doubtless true of the people who inhabited Uxmal and Palenque. The most important house was the tecpan, the official house of the tribe, the council house proper. This was the official residence of the "chief of men" and his assistants, such as runners. This was the place of meeting of the council of chiefs. It was here that the hospitality of the Pueblo was exercised. Official visitors from other tribes and traders from a distance were provided with accommodations here. When Cortez and his followers entered Mexico they were provided for at the tecpan. We would not expect to find these public buildings, except in rich and prosperous pueblos. It has been suggested that the Governor's House at Uxmal was the official house of that settlement. The large halls, suitable for council purposes, favor this idea.

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A third class of buildings was the teocalli, or "House of God"--in other words, the temple. These were quite common. Each of the gens that composed the Mexican tribe had its own particular medicine lodge or temple. This was doubtless true of each and every tribe of sedentary Indians in the territory we are describing. "The larger temples were usually built upon pyramidal parallelograms, square or oblong, and consisted of a series of superimposed terraces with perpendicular or sloping sides." It is not necessary to dwell longer on this style of buildings. We have only to recall the temples of the Sun, of the Cross, and of the Beau-relief at Palenque; the House of the Dwarf at Uxmal, and the Citadel at Chichen-Itza, to gather a clear idea of their construction.

The architecture of a people is a very good exponent of their culture. Yet all have seen what different views are held as to the culture of the tribes we are considering. We have, perhaps, said all that is required on this part of the subject, yet even repetition is pardonable if it enables us to more clearly understand our subject. The ornamentation on the ruins of Yucatan is so peculiar that in our opinion it has unduly influenced the judgment of explorers in this matter. They lose sight of the fact that the apartments of the houses are small,

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dark, and illy ventilated.

That they should hive gone to the trouble of so profusely decorating their usual places of abode is, indeed, somewhat singular. But Mitla was certainly an inhabited pueblo at the time of the Spanish conquest, and there is no good reason for concluding it was ever any thing more than a group of communal buildings. Yet, from the description given of it, we can not see that the buildings are greatly inferior in decoration to the structures in Yucatan. And yet again, from the imperfect accounts we have of the aboriginal structures in the pueblo of Mexico, we infer they were constructed on the general plan of communal buildings. As for the decorations, we have seen they had sometimes elaborate cornices, and were covered with stucco designs of animals and flowers. In this case some of them were, to be sure, public buildings for tribal purposes, but the majority of them were certainly communal residences. With these facts before us, we can not do otherwise than conclude that these so-called ruins of great cities we have described are simply the ruins of pueblos, consisting of communal houses, temples, and, in the case of large and powerful tribes, official houses. To this conclusion we believe American scholars are tending more and more.

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This requires us to dismiss the idea that the majority of the people lived in houses of a poorer construction, which have since disappeared, leaving the ruins of the houses of the nobles. There was no such class division of the people as this would signify. These ruins were houses occupied by the people in common. With this understanding, a questioning of the ruins can not fail to give us some useful hints. We are struck with their ingenuity as builders. They made use of the best material at hand. In Arizona the dry climate permits of the use of adobe bricks, which were employed, though stone was also used. Further south the pouring tropical rains would soon bring down in ruins adobe structures and so stone alone is used.

In the Arizona pueblo we have a great fortress-built house, three and four stories high, and no mode of access to the lower story. This is in strict accord with Indian principles of defense, which consists in elevated positions. Sometimes this elevated position was a natural hill, as at Quemada, Tezcocingo, and Xochicalco. Where no hill was at hand they formed a terraced pyramidal foundation, as at Copan, Palenque, and Uxmal. In the highest forms of this architecture this elevation is faced with stone, or even composed throughout of stone, as in the case of

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the House of Nuns at Chichen-Itza. In the construction of houses progress seems to have taken place in two directions. The rooms increased in size. In some of the oldest pueblo structures in Arizona the rooms were more like a cluster of cells than any thing else.

They grow larger towards the South. In the house at Teotihuacan M. Charney found a room twenty-seven feet wide by forty-one feet long. Two of the rooms in the Governor's House at Uxmal are sixty feet long. But the buildings themselves diminish in size. In Mexico the majority of the houses were but one story high, and but very few more than two stories. In Yucatan but few instances are recorded of houses two stories high. We must remember that throughout the entire territory we are considering the tribes had no domestic animals, their agriculture was in a rude state, and they were practically destitute of metals. They could have been no farther advanced on the road to civilization than were the various tribes of Europe during the Bronze Age. Remembering this, we can not fail to be impressed with the ingenuity, patient toil, and artistic taste they displayed in the construction and decoration of their edifices.

It may seem somewhat singular that we should treat of their

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architecture before we do of their system of government, but we were already acquainted with the ruins of the former. When we turn to the latter we find ourselves involved in very great difficulties. The description given of Mexican society by the majority of writers on these topics represent it as that of a powerful monarchy. The historian Prescott, in his charming work draws a picture that would not suffer by comparison with the despotic magnificence of Oriental lands. At a later date Mr. Bancroft, supporting himself by an appeal to a formidable list of authorities, regilds the scene.

But protests against such views are not wanting. Robertson, in his history, though bowing to the weight of authority can not forbear expressing his conviction that there had been some exaggeration in the splendid description of their government and manners. Wilson, more skeptical, and bolder, utterly repudiates the old accounts, and refuses to believe the Aztecs were any thing more than savages.

With such divergent and conflicting views, we at once perceive the necessity of carefully scanning all the accounts given, and make them conform, if possible, to what is known of Indian institutions and manners. The Mexicans are but one of several tribes that are the subjects of our research; but their

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institutions are better known than the others, and, in a general way, whatever is true of them will be true of the rest. We have seen the efforts of the Spanish explorers to explain whatever they found new or strange in America by Spanish words, and the results of such procedure. We are at full liberty to reject their conclusions and start anew.

What the Spaniards found around the lakes of Mexico was a union or confederacy of three tribes. Very late investigations by Mr. Bandelier have established the presence of the usual subdivisions of the tribes. So we have here a complete organization according to the terms of ancient society: that is, the gens, phratry, tribe, and confederacy of tribes. It is necessary that we spend some time with each of these subdivisions before we can understand the condition of society among the Mexicans, and, in all probability, the society among all of the civilized nations of Central America.

We will begin with the gens, or the lowest division of the tribe. We must understand its organization before we can understand that of a tribe, and we must master the tribal organization before attempting to learn the workings of the confederacy. To neglect this order, and commence at the top of

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the series, is to make the same mistake that the older writers did in their studies into this culture. A gens has certain. rights, duties, and privileges which belong to the whole gens, and we will consider some of the more important in their proper place. We must understand by a gens a collection of persons who are considered to be all related to each other. An Indian could not, of his own will, transfer himself from one gens to another. He remained a member of the gens into which he was born. He might, by a formal act of adoption, become a member of another gens; or he might, in certain contingencies, lose his connection with a gens and become an outcast. There is no such thing as privileged classes in a gens. All its members stand on an equal footing. The council of the gens is the supreme ruling power in the gens. Among some of the northern tribes, all the members in the gens, both male and female, had a voice in this council. In the Mexican gens, the council itself was more restricted. The old men, medicine men, and distinguished men met in council--but even here, on important occasions, the whole gens met in council.

Each gens would, of course, elect its own officers. They could remove them from office as well, whenever occasion required. The Mexican gentes elected two officers. One of these corresponded

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to the sachem among northern tribes. His residence was the official house of the gens. He had in charge the stores of the gens; and, in unimportant cases, he exercised the powers of a judge. The other officer was the war-chief. In times of war he commanded the forces of the gens. In times of peace he was, so to speak, the sheriff of the gens.

The next division of the tribe was the phratry--the word properly meaning a brotherhood. Referring to the outline below, we notice that the eight gentes were reunited into two phratries. Mr. Morgan tells us that the probable origin of phratries was from the subdivision of an original gens. Thus a tradition of the Seneca Indians affirms that the Bear and the Deer gentes were the original gentes of that tribe.
In process of time they split up into eight gentes, which would each have all the rights and duties of an original gens--but, for certain purposes, they were still organized into two divisions.

First Phratry, Bear
or Wolf Gens.
Brotherhood. Beaver
Turtle

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TRIBE.

Second Phratry, Deer

or Snipe Gens.

Brotherhood. Heron

Hawk

Each of these larger groups is called a phratry. All of the Iroquois tribes were organized into phratries, and the same was, doubtless, true of the majority of the tribes of North America. The researches of Mr. Bandelier have quite conclusively established the fact, that the ancient Mexican tribe consisted of twenty gentes reunited as four phratries, which constituted the four quarters of the Pueblo of Mexico.

It is somewhat difficult to understand just what the rights and duties of a phratry were. This division does not exist in all tribes. But, as it was present among the Mexicans, we must learn what we can of its powers. Among the Iroquois the phratry was apparent chiefly in religious matters, and in social games. They did not elect any war-chief. The Mexican phratry was largely concerned with military matters. The forces of each phratry went out to war as separate divisions. They had their own costumes and banners. The four phratries chose each their

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war-chief, who commanded their forces in the field, and who, as commander, was the superior of the war-chiefs of the gentes.

In time of peace, they acted as the executors of tribal justice. They belonged to the highest grade of war-chiefs in Mexico--but there was nothing hereditary about their offices. They were strictly elective, and could be deposed for cause. They were in no case appointed by a higher authority. One of these chiefs was always elected to fill the office of "Chief of Men;" and, in cases of emergency, they could take his place--but this would be only a temporary arrangement.

Ascending the scale, the next term of the series is the tribe. The Spanish writers took notice of a tribe, but failed to notice the gens and phratry. This is not to be considered a singular thing. The Iroquois were under the observation of our own people two hundred years before the discovery was made in reference to them. "The existence among them of clans, named after animals, was pointed out at an early day, but without suspecting that it was the unit of a social system upon which both the tribe and the confederacy rested." But, being ignorant of this fact, it is not singular that they made serious mistakes in their description of the government.

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We now know that the Mexican tribe was composed of an association of twenty gentes, that each of these gens was an independent unit, and that all of its members stood on an equal footing. This, at the outset, does away with the idea of a monarchy. Each gens would, of course, have an equal share in the government. This was effected by means of a council composed of delegates from each gens. There is no doubt whatever of the existence of this council among the Mexicans. "Every tribe in Mexico and Central America, beyond a reasonable doubt, had its council of chiefs. It was the governing body of the tribe, and a constant phenomenon in all parts of aboriginal America."
The Spanish writers knew of the existence of this council, but mistook its function. They generally treat of it as an advisory board of ministers appointed by the "king."

Each of the Mexican gens was represented in this council by a "Speaking Chief," who, of course was elected by the gens he represented. All tribal matters were under the control of this council. Questions of peace and war, and the distribution of tribute, were decided by the council. They also had judicial duties to perform. Disputes between different gentes were adjusted by them. They also would have jurisdiction of all

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crimes committed by those unfortunate individuals who were not members of any gens, and of crimes committed on territory not belonging to any gens, such as the Teocalli, Market-place, and Tecpan.

The council must have regular stated times of meeting; they could be called together at any time. At the time of Cortez's visits they met daily. This council was, of course, supreme in all questions coming before it; but every eighty days there was a council extraordinary. This included the members of the council proper, the war-chiefs of the four phratries, the war-chiefs of the gentes, and the leading medicine men. Any important cause could be reserved for this meeting, or, if agreed upon, a reconsideration of a cause could be had. We must understand that the tribal council could not interfere in any matter referring solely to a gens; that would be settled by the gens itself.

The important points to be noticed are, that it was an elective body, representing independent groups, and that it had supreme authority. But the tribes needed officers to execute the decrees of the council. Speaking of the Northern tribes, Mr. Morgan says, "In some Indian tribes, one of the sachems was recognized

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as its head chief; and so superior in rank to his associates. A need existed, to some extent for an official head of the tribe, to represent it when the council was not in session. But the duties and powers of the office were slight. Although the council was superior in authority, it was rarely in session, and questions might arise demanding the provisional action of some one authorized to represent the tribe, subject to the ratification of his acts by the council."

This need was still more urgent among the Mexicans; accordingly we find they elected two officials for this purpose. It seems this habit of electing two chief executives was quite a common one among the tribes of Mexico and Central America. We have already noticed that the Mexican gentes elected two such officers for their purpose. We are further told that the Iroquois appointed two head war-chiefs to command the forces of the confederacy.

One of the chiefs so elected by the Mexicans bore the somewhat singular title of "Snake-woman." He was properly the head-chief of the Mexicans. He was chairman of the council and announced its decrees. He was responsible to the council for the tribute received, as far as it was applied to tribal requirements, and

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for a faithful distribution of the remainder among the gentes.
When the forces of the confederacy went out to war, he commanded
the tribal forces of Mexico; but on other occasions this duty
was fulfilled by his colleague, who was the real war-chief of
the Mexicans. His title was "Chief-of-men." This is the official
who appears in history as the "King of Mexico," sometimes, even,
as "Emperor of Anahuac." The fact is, he was one of two equal
chiefs; he held an elective office, and was subordinate to
the council.

When the confederacy was formed, the command of its forces was
given to the war-chief of the Mexicans; thus he was something
more than a tribal officer. His residence was the official house
of the tribe. "He was to be present day and night at this abode,
which was the center wherein converged the threads of
information brought by traders, gatherers of tribute, scouts and
spies, as well as all messages sent to, or received from,
neighboring friendly or hostile tribes. Every such message came
directly to the 'Chief-of-men,' whose duty it was, before
acting, to present its import to the 'Snake-woman,' and, through
him, call together the council." He might be present at the
council, but his presence was not required, nor did his vote
weigh any more than any other member of the council, only, of

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course, from the position he occupied, his opinion would be much respected. He provided for the execution of the council's conclusions. In case of warp he would call out the forces of the confederacy for assistance. As the procurement of substance by means of tribute was one of the great objects of the confederacy, the gathering of it was placed under the control of the war-chief, who was therefore the official head of the tribute-gatherers.

We have thus very imperfectly and hastily sketched the governmental organization of the Mexican tribe. It is something very different from an empire. It was a democratic organization. There was not an officer in it but what held his office by election. This, to some, may seem improbable, because the Spaniards have described a different state of things. We have already mentioned one reason why they should do so--that was their ignorance of Indian institutions. We must also consider the natural bias of their minds. The rule of Charles the V was any thing but liberal. It was a part of their education to believe that a monarchical form of government was just the thing; they were accordingly prepared to see monarchical institutions, whether they existed or not.

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Then there was the perfectly natural disposition to exaggerate their achievements. To spread in Europe the report that they had subverted a powerfully organized monarchy, having an emperor, a full line of nobles, orders of chivalry, and a standing army, certainly sounded much better than the plain statement that they had succeeded in disjointing a loosely connected confederacy, captured and put to death the head war chief of the principal tribe, and destroyed the communal buildings of their pueblo.

We must not forget that, from an Indian point of view, the confederacy was composed of rich and powerful tribes. This is especially true of the Mexicans. The position they held, from a defensive standpoint, was one of the strongest ever held by Indians. They received a large amount of tribute from subject tribes, along with the hearty hatred of the same. From the time Cortez landed on the shore he had heard accounts of the wealth, power, and cruelty of the Mexicans. When he arrived before Mexico the "Chief-of-men," Montezuma, as representative of tribal hospitality, went forth to meet him, extending "unusual courtesies to unusual, mysterious, and therefore dreaded, guests." We may well imagine that he was decked out in all the finery his office could raise, and that he put on as much style and "court etiquette" as their knowledge and manner of life

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would stand.

The Spaniards immediately concluded that he was king, and so he was given undue prominence. They subsequently learned of the council, and recognized the fact that it was really the supreme power. They learned of the office of "Snake-woman," and acknowledged that his power was equal to that of the "Chief-of-men." They even had some ideas of phratries and gentes. But, having once made up their minds that this was a monarchy, and Montezuma the monarch, they were loath to change their views, or, rather, they tried to explain all on this supposition, and the result is the confused and contradictory accounts given of these officials and divisions of the people. But every thing tending to add glory to the "Empire of Montezuma" was caught up and dilated upon. And so have come down to us the commonly accepted ideas of the government of the ancient Mexicans.

That these views are altogether erroneous is no longer doubted by some of the very best American scholars. The organization set forth in this chapter is one not only in accord with the results obtained by the latest research in the field of ancient society, but a careful reading of the accounts of the Spanish writers

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leads to the same conclusions. In view of these now admitted facts, it seems to us useless to longer speak of the government of the Mexicans as that of an empire.

We have as yet said nothing of the league or confederacy of the three tribes of Mexico, Tezcuco, and Tlacopan; nor is it necessary to dwell at any great length on this confederacy now. They were perfectly independent of each other as regards tribal affairs; and for the purpose of government, were organized in exactly the same way as were the Mexicans. The stories told of the glories, the riches, and power of the kings of Tezcuco, if any thing, outrank those of Mexico. We may dismiss them as utterly unreliable. Tribal organization resting on phratries and gentes, and the consequent government by the council of the tribe was all the Spaniards found. These three tribes, speaking dialects of the same stock language, inhabiting contiguous territory, formed a league for offensive and defensive purposes. The commander-in-chief of the forces raised for this purpose was the "Chief-of-men" of the Mexicans.

We have confined our researches to the Mexicans. Mr. Bandelier, speaking of the tribes of Mexico, remarks: "There is no need of proving the fact that the several tribes of the valley had

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identical customs, and that their institutions had reached about the same degree of development." Or if such proofs were needed, Mr. Bancroft has furnished them. So that this state of society being proven among the Mexicans, it may be considered as established among the Nahua tribes. Neither is there any necessity of showing that substantially the same state of government existed among the Mayas of Yucatan. This is shown by their architecture, by their early traditions, and by many statements in the writings of the early historians. These can only be understood and explained by supposing the same social organization existed among them as among the Mexicans.

But this does not relegate these civilized nations to savagism. On the other hand, it is exactly the form of government we would expect to find among them. They were not further along than the Middle Status of barbarism. They were slowly advancing on the road that leads to civilization, and their form of government was one exactly suited to their needs, and one in keeping with their state of architecture. When we gaze at the ruins of their material structures, we must consider that before us are not the only ruins wrought by the Spaniards; the native institutions were doomed as well. Traces of this early state of society are, however, still recoverable, and we must study them well to learn

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their secret.

We have yet before us a large field to investigate; that is, the advance made in the arts of living among these people. This is one of the principal objects of our present research. We are here slightly departing from the prehistoric field, and entering the domain of history. But the departure is justifiable, as it serves to light up an extensive field, that is, the manner of life among the civilized nations just before the coming of the Spaniards. And first we will examine their customs in regard to property. We have in a former chapter reverted to the influence of commerce and trade in advancing culture. The desire for wealth and property which is such a controlling power to-day was one of the most efficient agents in advancing man from savagism to civilization. The idea of property, which scarcely had an existence during that period of savagism, had grown stronger with every advance in culture. "Beginning in feebleness, it has ended in becoming the master passion of the human mind."

The property of savages is limited to a few articles of personal use; consequently, their ideas as to its value, and the principles of inheritance, are feeble. They can scarcely be said to have any idea as to property in lands, though the tribe may

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lay claim to certain hunting-grounds as their own. As soon as the organization of gens arose, we can see that it would affect their ideas of property. The gens, we must remember, was the unit of their social organization.

They had common rights, duties, and privileges, as well as common supplies; and hence the idea arose that the property of the members of a gens belonged to the gens. At the death of an individual, his personal property would be divided among the remaining members of the gens. "Practically," says Mr. Morgan, "they were appropriated by the nearest of kin; but the principle was general that the property should remain in the gens." That this is a true statement there is not the shadow of a doubt. This was the general rule of inheritance among the Indian tribes of North America. As time passed on, and the tribes learned to cultivate the land, some idea of real property would arise--but not of personal ownership.

This is quite an important topic; because, when we read of lords with great estates, we are puzzled to know how to reconcile such statements with what we now know of the nature of Mexican tribal organization. Mr. Bandelier has lately gone over the entire subject. He finds that the territory on which the Mexicans

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originally settled was a marshy expanse of land which the surrounding tribes did not value enough to claim.

This territory was divided among the four gentes of the tribe. As we have already seen, each of these four gentes subsequently split up into other independent gentes until there were twenty in all. Each of these gens held and possessed a portion of the original soil. This division of the soil must have been made by tacit consent. The tribe claimed no ownership of these tracts, still less did the head-chief. Furthermore, the only right the gentes claimed in them was a possessory one. "They had no idea of sale or barter, or conveyance, or alienation." As the members of a gens stood on equal footing, this tract would be still further divided for individual use. This division would be made by the council of the gens. But we must notice the individual acquired no other right to this tract of land than a right to cultivate it--which right, if he failed to improve, he lost. He could, however, have some one else to till it for him. The son could inherit a father's right to a tract.

We have seen that the Mexicans had a great volume of tribal business to transact, which required the presence of an official household at the tecpan. Then the proper exercise of tribal

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hospitality required a large store of provisions. To meet this demand, certain tracts of the territory of each gens were set aside to be worked by communal labor. Then, besides the various officers of the gens, and the tribe, who, by reason of their public duties, had no time to till the tracts to which, as members of a gens, they would be entitled, had the same tilled for them by communal labor. This was not an act of vassalage, but a payment for public duties.

This is a very brief statement of their customs as regards holding of lands. It gives us an insight into the workings of ancient society. It shows us what a strong feature of this society was the gens, and we see how necessary it is to understand the nature of a gens before attempting to understand ancient society. We see that, among the civilized nations of Mexico and Central America, they had not yet risen to the conception of ownership in the soil. No chief, or other officer, held large estates. The possessory right in the soil was vested in the gens composing the tribe, and they in turn granted to individuals certain definite lots for the purpose of culture. A chief had no more right in this direction than a common warrior. We can easily see how the Spaniards made their mistake. They found a community of persons holding land in common, which

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the individuals could not alienate. They noticed one person among them whom the others acknowledged as chief. They immediately jumped to the conclusion that this chief was a great "lord," that the land was a "feudal estate," and that the persons who held it were "vassals" to the aforesaid "lord."

We must now consider the subject of laws, and the methods of enforcing justice amongst the civilized nations. The laws of the Mexicans, like those of most barbarous people, are apt to strike us as being very severe; but good reasons, according to their way of thinking, exist for such severity. The gens is the unit of social organization; which fact must be constantly borne in mind in considering their laws. In civilized society, the State assumes protection of person and property; but, in a tribal state of society, this protection is afforded by the gens. Hence, "to wrong a person was to wrong his gens; and to support a person was to stand behind him with the entire array of his gentile kindred."

The punishment for theft varied according to the value of the article stolen. If it were small and could be returned, that settled the matter. In cases of greater value it was different. In some cases the thief became bondsman for the original owner.

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In still others, he suffered death. This was the case where he stole articles set aside for religion--such as gold and silver, or captives taken in war; or, if the theft were committed in the market-place. Murder and homicide were always punished with death. According to their teaching, there was a great gulf between the two sexes. Hence, for a person of one sex to assume the dress of the other sex was an insult to the whole gens--the penalty was death. Drunkenness was an offense severely punished--though aged persons could indulge their appetite, and, during times of festivities, others could. Chiefs and other officials were publicly degraded for this crime. Common warriors had their heads shaved in punishment.

These various penalties necessarily suppose judicial officers to determine the offense and decree the punishment. Having established, on a satisfactory basis, the Mexican empire, the historians did not scruple to fit it out with the necessary working machinery of such an organization. Accordingly we are presented with a judiciary as nicely proportioned as in the most favored nations of to-day. But when, under the more searching light of modern scholarship, this empire is seen to be something quite different, we find the whole judicial machinery to be a much more simple affair.

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Not much need be added on this point to what we have already mentioned. Each gens, through its council, would regulate its own affairs, and would punish all offenses against the law committed by one of its members against another. Of necessity the decision of this council had to be final. There was no appeal from its decision. The council of the tribe had jurisdiction in all other cases--such as might arise between members of different gentes, or among outcasts not connected with any gens, or such as were committed on territory not belonging to any gens.

For this work, the twenty chiefs composing the council were subdivided into two bodies, sitting simultaneously in the different halls of the tecpan. This division was for the purpose of greater dispatch in business. They did not form a higher and lower court, with power of the one to review the decisions of the other. They were equal in power and the decisions of both were final. The decision of the council, when acting in a judicial capacity, would be announced by their foreman, who was, as we have seen, the head-chief of the Mexicans--the Snake-woman. It is for this act that the historian speaks of him as the supreme judge, and makes him the head of judicial

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authority. His decisions were, of course, final, not because he made them, but because they were the conclusions of the council.

The "Chief-of-men," the so-called "king," did not properly have any judicial authority. He was their war-chief, and not a judge; but from the very nature of his office he had some powers in this direction. As commander-in-chief, he possessed authority to summarily punish (with death, if necessary) acts of insubordination and treachery during war. It was necessary to clothe him with a certain amount of discretionary power for the public good. Thus, the first runner that arrived from the coast with news of the approach of the European ships was, by the order of Montezuma, placed in confinement. "This was done to keep the news secret until the matter could be investigated, and was therefore a preliminary measure of policy." Placed at the tecpan as the official head of the tribe, he had power to appoint his assistants. But this power to appoint implied equal power to remove, and to punish.

This investigation into their laws and methods of enforcing them, carries us to the conclusion already arrived at. It is in full keeping with what we would expect of a people in the Middle

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Status of barbarism. We also see how little real foundation there is for the view that this was a monarchy. There is no doubt but that the pueblo of Mexico was the seat of one of the largest and most powerful tribes, and the leading member of one of the most powerful confederacies that had ever existed in America.

It may be of interest for us to inquire as to what was the real extent of this power, and the means employed by the Mexicans to maintain this power; also how they had succeeded in attaining the same. They were not by nature more gifted than the surrounding tribes. The valley of Mexico is an upland basin. It is oval in form, surrounded by ranges of mountains, rising one above the other, with depressions between. The area of the valley itself is about sixteen hundred square miles.
The Mexicans were the last one of the seven kindred tribes who styled themselves, collectively, the Nahuatlacs. We treat of them as the Nahuas.

The Nahuas on the north and the Mayas on the south included the civilized nations. When the Mexicans arrived in this valley, they found the best situations already occupied by other tribes of their own family. To escape persecution from these, they fled

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into the marsh or swamp which then covered the territory which they subsequently converted into their stronghold. Here on a scanty expanse of dry soil, surrounded by extensive marshes, they erected their pueblo. Being few in numbers they were overlooked as insignificant, and thus they had a chance to improve their surroundings. They increased the area of dry land by digging ditches, and throwing the earth from the same on the surrounding surface, and thus elevated it. In reality, in the marshes that surrounded their pueblo was their greatest source of strength. "They realized that while they might sally with impunity, having a safe retreat behind them, an attack upon their position was both difficult and dangerous for the assailant." They were, therefore, strong enough for purposes of defense. But they wished to open up communication with the tribes living on the shore of the great marsh in the midst of which they had their settlement. For this purpose they applied to their near and powerful neighbors, the Tecpanics, for the use of one of the springs on their territory, and for the privilege of trade and barter in their market. This permission was given in consideration that the Mexicans become the weaker allies of the Tecpanics, that is, pay a moderate tribute and render military assistance when called upon.

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The Pueblo of Mexico now rapidly increased in power. Communication being opened with the mainland, it was visited by delegates from other tribes, and especially by traders. They fully perceived the advantages of their location and improved the same. By the erection of causeways, they entirely surrounded their pueblo with an artificial pond of large extent. To allow for the free circulation of the water, sluices were cut, interrupting these causeways at several places. Across these openings wooden bridges were placed which could be easily removed in times of danger.

Thus it was that they secured one of the strongest defensive positions ever held by Indians. The Tecpanics had been the leading power in the valley, but the Mexicans now felt themselves strong enough to throw off the yoke of tribute to which they were subject. In the war that ensued the power of the Tecpanics was broken, and the Mexicans became at once one of the leading powers of the valley. We must notice, however, that the Mexicans did not gain any new territory, except the locality of their spring. Neither did they interfere at all in the government of the Tecpanics. They simply received tribute from them.

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Once started on their career of conquest, the Mexicans, supported by allies, sought to extend their power. The result was that soon they had subdued all of the Nahua tribes of the valley except one, that was a tribe located at Tezcuco. This does not imply that they had become masters of the territory of the valley. When a modern nation or state conquers another, they often add that province to their original domain, and extend over it their code of laws. This is the nature of the conquests of ancient Rome. The territory of the conquered province became part of the Roman Empire. They became subject to the laws of Rome. Public, works were built under the direction of the conquerors, and they were governed from Rome or by governors appointed from there.

Nothing of this kind is to be understood by a conquest by the Mexicans, and it is necessary to understand this point clearly. When they conquered a tribe, they neither acquired nor claimed any right to or power over the territory of the tribe. They did not concern themselves at all with the government of the tribe. In that respect the tribe remained free and independent. No garrisons of troops were stationed in their territory to keep them in subjection; no governors were appointed to rule over them. What the Mexicans wanted was tribute, and in case of war

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they could call on them for troops. Secure in their pueblo surrounded by water, they could sally out on the less fortunate tribes who chose to pay tribute rather than to be subject to such forays.

Instead of entering into a conflict with the tribe at Tezcuco, the result of which might have been doubtful, a military confederacy was formed, into which was admitted the larger part of the old Tecpanic tribe that had their chief pueblo at Tlacopan. The definite plan of this confederacy is unknown. Each of the three tribes was perfectly independent in the management of its own affairs. Each tribe could make war on its own account if it wished, but in case it did not feel strong enough alone, it could call on the others for assistance. When the force of the confederacy went out to war, the command was given to the war chief of the Mexicans, the "Chief-of-men."

If a member of the confederacy succeeded in reducing by its own efforts a tribe to tribute, it had the full benefit of such conquest. But when the entire confederacy had been engaged in such conquest, the tribute was divided into five parts, of which two went to Mexico, two to Tezcuco, and one to Tlacopan. This co-partnership for the purpose of securing tribute by the

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three most powerful tribes of the valley, under the leadership of Mexico, was formed about the year 1426, just about one hundred years from the date of the first appearance of the Mexicans in the valley.

From this time to the date of the Spanish conquest in 1520, the confederate tribes were almost constantly at war with the surrounding Indians, "and particularly with the feeble village Indians southward from the valley of Mexico to the Pacific, and thence eastward well towards Guatemala. They began with those nearest in position, whom they overcame, through superior numbers, and concentrated action, and subjected to tribute. These forays were continued from time to time for the avowed object of gathering spoil, imposing tribute and capturing prisoners for sacrifice, until the principal tribes within the area named, with some exceptions, were subdued and made tributary.

The territory of these tribes, thus subject to tribute, constitutes what is generally known as the Mexican Empire. But, manifestly, it is an abuse of language to so designate this territory. No attempt was made for the formation of a State which would include the various groups of aborigines settled in

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the area tributary to the confederacy. "No common or mutual tie connected these numerous and diverse tribes," excepting hatred of the Mexican confederacy. The tribes were left independent under their own chiefs. They well knew the tribute must be forthcoming, or else they would feel the weight of their conquerors' displeasure. But such a domination of the strong over the weak, for no other reason than to enforce an unwilling tribute, can never form a nation, or an empire.

These subject tribes, held down by heavy burdens--inspired by enmity, ever ready to revolt--gave no new strength to the confederacy: they were rather an element of weakness.

The Spaniards were not slow to take advantage of this state of affairs. The tribes of Vera Cruz, who could have imposed an almost impassable barrier to their advance through that section, were ready to welcome them as deliverers. The Tlascaltecans, though never made tributary to the Mexicans, had to wage almost unceasing war for fifty years preceding the coming of the Spaniards. Without their assistance, Cortez would never have passed into history as the conqueror of Mexico.

A word as to the real power of the Mexicans. Their strength lay more in their defensive position than any thing else. As we have just stated, the entire forces of the confederacy were unable to

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subject the Tlascaltecans, the Tarasca of Michhuacan were fully their equal in wealth and power. The most disastrous defeat that ever befell the forces of the confederacy was on the occasion of their attack upon this last-named people in 1479. They fled from the battle-field in consternation, and never cared to renew the attempt. As to the actual population of the Pueblo of Mexico, the accounts are very much at variance. Mr. Morgan, after taking account of their barbarous condition of life--without flocks and herds, and without field agriculture, but also considering the amount of tribute received from other tribes--considers that an estimate of two hundred and fifty thousand inhabitants in the entire valley would be an excessive number. Of these he would assign thirty thousand to the Pueblo of Mexico.

This is but an estimate. In this connection we are informed, that, when the forces of the confederacy marched against Michhuacan, as just stated, they counted their forces, and found them to be twenty-four thousand men. This includes the forces of the three confederate tribes, and their allies in the valley, and would indicate a population below Mr. Morgan's estimate.

The Spanish writers have left statements as to the population of Mexico which are, evidently, gross exaggerations. The most moderate estimate is sixty thousand inhabitants; but the

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majority of the writers increase this number to three hundred thousand.

The main occupation of the Aztecs, then, was to enforce the payment of tribute. From the limited expanse of territory at the disposal of the Mexicans, and the unusually large number of inhabitants for an aboriginal settlement, as well as the natural inclination of the Mexicans, they were obliged to draw their main supplies from tributary tribes. It is human for the strong to compel the weak to serve them. The inhabitants of North America were not behind in this respect. This is especially true of the civilized tribes of Mexico and Central America. The confederacy of the three most powerful tribes of Mexico was but a copartnership for the avowed purpose of compelling tribute from the surrounding tribes, and they were cruel and merciless in exacting the same.

Our information in regard to this tribute is derived almost entirely from a collection of picture writings, known as the Mendoza collection, which will be described more particularly when we describe their picture writings. The confederacy was never at a loss for an excuse to pounce upon a tribe and reduce them to tribute. Sometimes the tribe marked out for a prey,

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knowing their case to be hopeless, submitted at once when the demand was made; but, whether they yielded with or without a struggle, the result was the same--that is, a certain amount of tribute was imposed on them. This tribute consisted of articles which the tribe either manufactured, or was in situation to acquire by means of trade or war; but, in addition to this, it also included the products of their limited agriculture.

The same distribution of land obtained among all the civilized tribes that we have already sketched among the Mexicans. So, a portion of the territory of each conquered tribe would be set aside to be cultivated for the use of the confederacy. But, as the tribe did not have any land of its own, except for some official purpose, this implies that each gens would have to set aside a small part of its territory for such purpose. Such lots Mr. Bandelier calls tribute lots. These were worked by the gentes for the benefit of the Mexicans. It is to be noticed right here, that the Mexicans did not claim to own or control the land; this right remained in the gentes of the conquered tribe.

The miscellaneous articles demanded were generally such that they bore some relation to the natural resources of the pueblo.

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For instance: pueblos along the coast, in the warm region of country, had to furnish cotton cloth, many thousand bundles of fine feathers, sacks of cocoa, tiger-skins, etc. In other, and favorable locations for such products, the pueblos had to furnish such articles as sacks of lime, reeds for building purposes, smaller reeds for the manufacture of darts.

Illustration of Tribute Sheet.----------

These facts are ascertained in the Mendoza collection. We are given there the pictorial symbol, or coat-of-arms, of various pueblos; also, a pictorial representation of the tribute they wore expected to pay. The plate is a specimen of their tribute rolls. The pueblos paying it are not, however, shown. Considerable can be learned from a study of this collection --such, for instance, as that the Pueblo of Chala had to pay a tribute of forty little bells, and eighty copper ax blades. And, in another place, we learn that the Pueblo of Yzamatitan was tributary to eight thousand reams of paper. The articles are here pictured forth; the number is indicated by the flags, feathers, etc. The tribute of provisions consisted of such

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articles as corn, beans, cocoa, red-pepper, honey, and salt--amounting in all, according to this collection to about six hundred thousand bushels. Still it will not do to place too great a reliance on picture records. The number of tributary pueblos must have been constantly changing. The quantity of articles intended for clothing was certainly very great. A moderate quantity of gold was also collected from a few pueblos, where this was obtainable.

The collection of this tribute was one of the most important branches of government among the Mexicans. The vanquished stood in peril of their lives if they failed to keep their part of the contract. In the first place, the Mexicans took from each subject tribe hostages for the punctual payment of tribute. These hostages were taken to the Pueblo of Mexico, and held there as slaves; their lives were forfeited if the tribute was refused. But special officers were also assigned to the subject tribes, whose duty it was to see that the tribute was properly gathered and transmitted to Mexico. These stewards or tribute gatherers, are the officers that the early writers mistook for governors. Their sole business, however, had to do with the collection of the tribute, and they did not interfere at all in the internal affairs of the tribe.

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Where the forces of the confederacy had conquered a tribe, but one steward was required to tend to the tribute, but each of the confederate tribes sent their representative to such pueblos as had become their own prey, and as sometimes occurred, one pueblo paid tribute to each of the confederate tribes, it had to submit to the presence among them of three separate stewards.

We can easily enough see that it required men of ability to fill this position. They were to hold their residence in the midst of a tribe who were conquered, but held in subjection only by fear. To these people they were the constant reminder of defeat and disgrace. They were expected to watch them closely and report to the home tribe suspicious movements or utterances that might come to their notice. We need not wonder that these stewards were the tokens of chiefs. It was a part of their duty to superintend the removal of the tribute from the place where gathered to the Pueblo of Mexico. The tribe paying tribute were expected to deliver it at Mexico, but under the supervision of the steward. Arrived at Mexico the tribute was received, not by the so-called king, the Chief-of-men, but by the Snake-woman, or an officer to whom this personage delegated his authority. This officer was the chief steward, and made the final division

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of the tribute. We are not informed as to details of this division. A large part of it was reserved for the use of the tribal government. It was upon this store that the Chief-of-men could draw when supplies were needed for tribal hospitality or for any special purpose. The stores required for the temple, its priests and keepers were gathered from this source. The larger division must have gone direct to the stewards of the gentes, who would set some aside for their official uses, some for religion or medicine, but the larger part would be divided among the members of the gentes.

In our review of the social system of the Mexicans we have repeatedly seen how the organization of gentes influenced and even controled all the departments of their social and political system. One of the cardinal principles, we must remember, is that all the members of a gens stand on an equal footing. In keeping with this we have seen that all were trained as warriors; yet the great principle of the division of labor was at work. Some filled in their leisure during times of peace by acting as traders; others became proficient in some branch of work, such as feather work, or making gold and silver ornaments. Yet under a gentile system of society, persons practising such callings could never become very rich or proficient, simply

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because, being members of different gentes, there could not be that cooperation and united efforts among workmen in these various trades and callings that is necessary to advance them to the highest proficiency. It required the breaking up of the gentes and substituting for that group a smaller one, our modern family, as the unit of social organization, before great progress could be made.

From what we have just said it follows that it is not at all likely that there was any great extremes in the condition of the people. No very wealthy or extremely poor classes. This brings us to consider the condition of trade and commerce among them. They had properly no such a thing as money, so their commerce must have consisted of barter or trade and exchange. Some authorities assert quite positively that they had money, and mention as articles used for such purposes grains of cacao, "T" shaped pieces of tin or copper, and quills of gold dust. But Mr. Bandelier has shown that the word barter properly designates the transactions where such articles passed. But this absence of money shows us at once that the merchants of Mexico were simply traders who made their living by gathering articles from a distance to exchange for home commodities.

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We are given some very entertaining accounts of the wealth and magnificence of the "merchant princes of Mexico." It needs but a moment's consideration of the state of society to show how little foundation there is for such accounts. Mr. Bancroft also tells us that "throughout the Nahua dominions commerce was in the hands of a distinct class, educated for their calling, and everywhere honored by the people and by kings. In many regions the highest nobles thought it not disgraceful to engage in commercial pursuits."

Though we do not believe there is any foundation for this statement, yet trading is an important proceeding among sedentary tribes. "The native is carried over vast distances, from which he returns with a store of knowledge, which is made a part of his mythology and rites, while his personal adventures become a part of the folk lore." It was their principal way of learning of the outside world. It was held in equally high esteem among the Mexicans. Such an expedition was not in reality a private, but a tribal undertaking. Its members not only carried into distant countries articles of barter, but they also had to observe the customs, manners, and resources of the people whom they visited. Clothed with diplomatic attributes, they were often less traders than spies. Thus they cautiously felt their

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way from tribe to tribe, from Indian fair to Indian fair, exchanging their stuff for articles not produced at home, all the while carefully noting what might be important to their own tribe. It was a highly dangerous mission; frequently they never returned, being waylaid or treacherously butchered even while enjoying the hospitality of a pueblo in which they had been bartering."

We may be sure the setting out of such an expedition would be celebrated in a formal manner. The safe return was also an important and joyful event. The reception was almost equal to that afforded to a victorious war-party. After going to the temple to adore the idol, they were taken before the council to acquaint them with whatever they had learned of importance on their trip. In addition to this, their own gens would give them appropriate receptions. From the nature of things but little profit remained to the trader. They had no beasts of burden, and they must bring back their goods by means of carriers; and the number of such men were limited. Then their customs demanded that the most highly prized articles should be offered up for religious purposes; besides, the tribe and the gens each came in for a share. But the honors given were almost as great as those won in war.

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The Mexicans had regular markets. This, as we have already stated, was on territory that belonged to the tribe; not to any one gens alone. Hence the tribal officers were the ones to maintain order. The chiefs of the four phratries were charged with this duty. The market was open every day, but every fifth was a larger market. They do not seem to have had weights, but counted or measured their articles. In these markets, or fairs, which would be attended by traders from other tribes, who, on such occasions, were the guests of the Mexicans, and lodged in the official house, would be found the various articles of native manufacture: cloth, ornaments, elaborate featherwork, pottery, copper implements and ornaments, and a great variety of articles not necessary to enumerate.

We must now briefly consider their arts and manufactures. Stone was the material principally used for their weapons and implements. They were essentially in their Stone Age. Their knives, razors, lancets, spear and arrowheads were simply flakes of obsidian. These implements could be produced very cheaply, but the edge was quickly spoiled. Axes of different varieties of flint were made. They also used flint to carve the sculptured stones which we have described in the preceding

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chapter. They also had some way of working these big blocks of stone used in building. But they were not unacquainted with metals--the ornamental working of gold and silver had been carried to quite a high pitch. Were we to believe all the accounts given us of their skill in that direction, we would have to acknowledge they were the most expert jewelers known. How they cast or moulded their gold ornaments is unknown. They were also acquainted with other metals, such as copper, tin, and lead. But we can not learn for what purpose they used lead or tin, or where they obtained it.

Cortez, in one of his letters, speaks of the use of small pieces of tin as money. But we have already seen that the natives had not risen to the conception of money. They certainly had copper tools, and bronze ones. It seems, however, that their bronze was a natural production and not an artificial one--that is to say, the ores of copper found in Mexico contain more or less gold, silver, and tin. So, if melted, just as nature left them, the result would be the production of bronze. They were then ignorant of the knowledge of how to make bronze artificially. This shows us that they had not attained to a true Bronze Age; and yet the discovery could not have been long delayed. Sooner or later they would have found out that tin and copper

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melted together would produce the light copper that experience had taught them was the most valuable.

Illustration of Yucatan Axes.----------

The most important tool they made of copper was the ax. The ax, in both Mexico and Yucatan, was made as represented in this illustration. From their shape and mode of hafting them, we see at once they are simply models of the stone ax; and this recalls what we learned of the Bronze Age in Europe. At first they contented themselves with copying the forms in stone.

Illustrations of Carpenter's Ax, Mexican Carpenter, and Copper Tool.----------

Nature, everywhere, conducts her children by the same means to the same ends. This form of ax is a representation of a carpenter's hatchet. The next cut is from the Mendoza collection, and represents a carpenter at work. He holds one of

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these hatchets in his hand, and is shaping a stick of timber.

The other cut represents a form of copper tool found in Oaxaca, where they were once used in abundance. The supposition is that this implement was used for agricultural purposes--probably as a hoe. The pieces of T-shaped copper said to have been used as money, are diminutive forms of this same tool. The statement is sometimes made that they had a way of hardening copper. "This," says Mr. Valentine, "is a hypothesis, often noted and spoken of, but which ranges under the efforts made for explaining what we have no positive means to verify or to ascertain." The presence of metals necessarily implies some skill in mining; but their ability to mine was certainly very limited. Gold and silver were collected by washing the sands. We do not know how copper was mined; the probabilities are that this was done in a very superficial way. Whenever, by chance, they discovered a vein of copper, they probably worked it to an easy depth, and then abandoned it. M. Charney speaks of one such locality, discovered in 1873. In this case they had made an opening eleven feet long, five feet wide, and three feet deep. To judge from appearances, they first heated the rock, and then perhaps sprinkled it with water, and thus caused it to split up. This is about all we can discover of their Metallic Age. It falls very far short of the knowledge of metallurgy enjoyed by the Europeans of the

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Bronze Age; and, with the exception of working gold and silver, it was not greatly in advance of the powers of the North American aborigines. Certainly no trace of mining has been discovered at all on the scale of the ancient mines in Michigan.

A few words as to some of their other arts, and we will pass on to other topics. In manufacturing native pottery, they are spoken of as having great skill. The sedentary Indians everywhere were well up in that sort of work. They knew how to manufacture cotton cloth, as well as cloth from other articles. We have stated that paper furnished an important article of tribute. They made several kinds of paper. One author states that they made paper from the membrane of trees--from the substance that grows beneath the upper bark. But they also used for this purpose a plant, called the maguey plant. This was a very valuable plant to the aborigines, since we are told that the natives managed to extract nearly as great a variety of useful articles from it as does an inhabitant of the East Indies from his cocoa palm. Amongst other articles, they made paper. For this paper, we are told, "the leaves were soaked, putrefied, and the fibers washed, smoothed, and extended for the manufacture of thin as well as thick paper."

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They used feathers for plumes, fans, and trimmings for clothing. The articles the Spaniards are most enthusiastic in praising is that variety of work known as feather mosaic. They took very great pains with this sort of work. The workman first took a piece of cloth, stretched it, and painted on it, in brilliant colors, the object he wished to reproduce. Then, with his bunch of feathers before him, he carefully took feather after feather, arranging them according to size, color, and other details, and glued each feather to the cloth. The Spanish writers assert that sometimes a whole day was consumed in properly choosing and adjusting one delicate feather, the artist patiently experimenting until the hue and position of the feather, viewed from different points, and under different lights, became satisfactory to his eye.

This disregard of time is a thoroughly Indian trait of character. Years would be spent in the manufacture of a choice weapon. The impression is given that these feather-workers formed a craft, or order, and that they lived by themselves. But this would be such an innovation on the workings of the gens that there is probably no foundation for it.

We will now consider the subject of religion. We can never judge

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of the real state of culture of a people by their advance in the arts of government and of living alone. Constituted as men are, they can not help evolving, in the course of time, religious conceptions, and the result is that almost all the races and tribes of men have some system of belief, or, at any rate, some manner of accounting for the present condition of affairs, and some theory as to a future state. It is true that these theories and beliefs are often very foolish and childish, still they are not on that account devoid of interest. From our present standpoint, we can clearly see that the religions belief of a people is a very good index of their culture. At first such conceptions are necessarily rude, but as the people advanced in culture, they become clearer.

Fearing that we will be misunderstood in the last statement, we will state to whom it applies. The Christian world hold that God revealed himself to his chosen people, and that we draw from his Word what is permitted mortals to know of his government and the future world. We make no question but that this is true.
But long before there was a Hebrew people there was a Paleolithic race, who doubtless had some vague, shadowy, ill defined idea of supernatural power, and sought, in some infantile way, to appease the same. Afterwards, but long before

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the glories of Solomon, a Neolithic people were living in Palestine, and the same culture was wide-spread over the world. To this day a large part of the world's inhabitants have never so much as heard of the Christian religion. It is to such people that we especially refer.

The religious beliefs of the Indians have not been fully studied as yet; but, until that is done, it is scarcely possible to understand and fully weigh what is said as to the religious beliefs of the Mexicans. What we can discern of the religion of the Nahua and Maya tribes shows us that it is not at all probable they had reached a stage of development in which they had any idea of One Supreme, Over-ruling Power. But our scholars differ on that point, many contending that the Mexicans distinctly affirmed the existence of such a God. To form such conceptions implies a power of reasoning on abstract topics that is vain to expect of a people in their state of development. We think, therefore, that the idea that they had such a belief, arises from a misconception. Let us see if we can discover how that was.

Nearly all of the North American tribes had some word to express supernatural power. The Iroquois used for this purpose the words

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"oki" and "otkon." The first meaning of these words is "above." As used by these Indians, however, they expressed the working of any unseen, mysterious, and, therefore, to them, supernatural power. There was, however, no idea of personality or of unity about it. Other Indian tribes had words to express the same meaning. The English and French explorers translated these words into their languages in various ways. The most common is the rather absurd one of "medicine," which has passed into common use. Thus, to mention one in very frequent use, we have the expression "Medicine-men"--meaning their priests and conjurers. The same custom prevailed among the higher class of sedentary Indians of Mexico and Central America. The Aztecs used the word "teotl" to express the name meaning; the Mayas, the word "ku;" the Peruvians, "huaca." But the word used, in each case, meant not so much a personal supreme-being as it did an ill-defined sense of supernatural, mysterious power. This point not being clearly understood, it was quite natural that the early writers understood by these various expressions their name of the First Cause.

In the present state of our knowledge, it is certainly very hard to give an intelligent statement of the religious conceptions of the Maya and Nahua tribes. Among the Nahuas, their conception of

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creative power was that of a pair--a man and wife. These were not the active agents, however--they engendered four sons, who were the creators. This seems to be a widely extended form of tradition. Two authors, writing about fifty years after the conquest, speak of the four principal deities and statues. They had a great many idols besides--but four were the principal ones.

It would be very satisfactory could we frame some theory to account for this state of things. If we could only be sure that each god was symbolic of some of the elements--or, if we could only say that this was but another instance of the use of the number "four"--and thus connect them with the cardinal points, it would be very satisfactory to many. The amount of study that has been bestowed on this question is very great, and it is very far from being settled. Each of these four was the principal, or guardian, deity of a particular tribe. All of these appear in native traditions as historical personages, as well as deities. It is for this reason that Mr. Bandelier concludes that the "four principal gods were deified men, whose lives and actions became mixed up with the vague ideas of natural forces and phenomena."

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As prominent a figure as any in Central American Mythology is Quetzalcohuatl; and we can form a good idea of the force of the preceding remarks by considering this case. The name is a compound of two words, "quetzal-cohuatl"--and is, says Mr. Bandelier, a fair specimen of an Indian personal name. He tells us that the meaning is "bright," or "shining snake." Others have translated it, "feathered serpent." We have referred to the attempt to show that the tablet of the cross, at Palenque, had reference to him. Those who think he was the nature-god of the Nahuas find a great deal of significance in the name.
Mr. Bandelier, after carefully considering all reference to him by the early writers, shows that it is quite as likely that Quetzalcohuatl "was a man of note, whose memory was afterward connected with dim cosmological notions." It is plain that our idea of the culture of the Mexicans will vary according as we consider the base of this myth to be a man, or the forces in nature producing the fertilizing summer rain.

The worship of Quetzalcohuatl was very widely extended; but it was mostly confined to the Nahua tribes. But there are somewhat similar traditions among the Maya tribes; and this is one of those few points which, like the similarity of their calendar systems, seems to point to a close connection in early times.

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The Quiches have a very similar myth. Briefly, it is to the effect that four principal gods created the world. One of these was named Gucumatz--meaning, also, shining, or brilliant snake. Some think that this is the same personage as Quetzalcohuatl, and from this fact show how true it is that the operations of the forces of nature everywhere affect the minds of men in a similar manner. Others will not, however, go as far as this, and will only say there is a similarity between the two characters. The tribes in Yucatan also have a tradition of Cuculcan, whose name means the same as the two already mentioned. The authority who refers to him speaks of him only as a man. The Quiche legend, already referred to, speaks of Gucumatz only as a god. The Nahua traditions of Quetzalcohuatl, as we have seen, are confused accounts of a man and a god.

The traditions having reference to the earthly career of Quetzalcohuatl represent him as having considerable to do with Tulla and Cholula. At Tulla he appears in the light of a great medicine-man, or priest; at Cholula, as a sachem. Still other traditions represent him as a great and successful warrior. None of these characters are incompatible with the others, from an Indian point of view. These traditions are so hopelessly confused, that it is doubtful if any thing of historical value

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can be gained from them. As a deity, he was worshiped as god of the air or wind. Why he should be so considered is answered in various ways. If, reasoning from his name, we choose to believe he is a nature-god--as such standing for the thunder-storm, clouds of summer--then, as the winds "sweep the path for the rain-clouds," he would be considered their god. Also, following out this line of thought, we can see how, as the god which brings the fertilizing summer rain, he would be considered the god of wealth, and the patron deity of traders.

We must not lose sight of the fact that all these traditions are most woefully mixed; that, since the conquest, many ideas from other than native sources have been engrafted on them; and, furthermore, that other explanations that are worth considering can be presented. The horticultural tribe located at Cholula had Quetzalcohuatl for their tutelar deity. Their crops depend upon the timely descent of the rain. What more natural than that they should regard such rains as sent by him? This pueblo was also famous for its fairs. "By its geographical position, its natural products, and the industry of its people," it became a great trading market. Near it was raised cochineal dye, in large quantities. This was eagerly sought after by traders from a distance. Cholula was also famous for its pottery.

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The Tlaxcaltecos told Cortez that the inhabitants of Cholula were a tribe of traders; what more natural, then, than that their tutelar deity should become, in the eyes of foreign tribes, the god of traders.

Quetzalcohuatl was but one of the four principal gods. The tutelar deity of the Mexicans was Huitzilopochtli. His altars were almost daily wet with the blood of sacrificed victims. No important war was undertaken, except with many ceremonies he was duly honored. If time were so short that proper care could not be bestowed on the ceremonies, then there was a kind of deputy god that could be served in a hurried manner that would suffice. After a successful battle, the captives were conducted at once to his temple, and made to prostrate themselves before his image. In times of great public danger, the great drum in his temple was beaten. The Spaniards, by dire experience, knew well the meaning of that awful sound.

Illustration of Huitzilopochtli.----------

The plate represents what was probably the idol of

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Huitzilopochtli. "It was brought to light in grading the Plaza Mayor in the City of Mexico in August, 1790. It was near the place where the great Teocalli stood, and where the principal monuments of Mexico were. They were thrown down at the time of the conquest and buried from sight. It is an immense block of bluish-gray porphyry, about ten feet high and six feet wide and thick, sculptured on front, rear, top and bottom, into a most complicated and horrible combination of animal, human, and ideal forms." This idol is generally stated to be that of the goddess of death. But Mr. Bandelier, after carefully reviewing all the authorities, concludes that it represents the well-known war-god of the Mexican tribe.

To properly conduct the services in honor of these various gods, required established rites and a priesthood. What we call "Medicine men" wizards, and names of similar import among the northern tribes, were more correctly priests. There was no tribe of Indians so poor but what they had these priests. But we would expect this office to increase more in power and importance among the southern Indians. Among the Iroquois, we are told each gens elected certain "keepers of the faith." These included persons both male and female. Their principal duty was to see that the feast days were properly celebrated. From what we know

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of the gens we feel confident that they would be perfectly, independent in religious matters as well as in other respects. Consequently it is not probable that there was even in Mexico any hereditary caste of priests.

However set aside, or chosen, or elected, we have every reason to believe that the organization of the priesthood was systematic. The aspirant for the office had to acquaint himself with the songs and prayers used in public worship, the national traditions, their principles of astrology, so as to tell the lucky and unlucky days. When admitted to the priesthood, their rank was doubtless determined by meritorious actions. Successes in war would contribute to this result as well as sanctity, a priest who had captured several prisoners ranking higher than one who had captured but one, and this last higher than the unfortunate who had taken none. We must not forget that war was the duty of all among the Mexicans. The priests were not in all cases exempt; part of their duties may have been to care for the wounded. It is not likely that the priests of any one god ranked any higher than the priests of others, or had any authority over them.

This body of priests of whom we have just treated concerned

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themselves a great deal with the social life of the Mexicans, and their power was doubtless great. Their duties commenced with the birth of the child, and continued through life. No important event of any kind was undertaken without duly consulting the priests to see if the day selected was a lucky one. The Nahuas were, like all Indians, very superstitious, so there was plenty of work cut out for the priests. Into their hands was committed the art of explaining dreams, fortune-telling, astrology, and the explanation of omens and signs. Such as the flight and songs of birds, the sudden appearance of wild animals; in short, any unexpected or unusual event, was deemed of sufficient importance to require in its explanation priestly learning. In addition there was the regular routine of feasts. We have seen what a multitude of gods the Nahuas worshiped. Like all Indian people, they were very fond of feasts and gatherings of that character; therefore feast days in honor of some one of the numerous deities were almost constantly in order, and every month or two were feasts of unusual importance. The most acceptable sacrifice to these gods, and without which no feast of any importance was complete, was human life.

This introduces us to the most cruel trait of their character. It was not alone true of the Mexicans, but of all the Nahua

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tribes and of the Mayas, though in a less degree. On every occasion of the least importance victims were sacrificed. Any unusual event was celebrated in a similar manner. Before the departure of a warlike expedition, the favor of Huitzilopochtli was sought by the sacrifice of human life; on the return of the same, similar scenes were enacted. On all such occasions the more victims the better. These victims were mostly captives taken in war, and wars were often entered into for the express purpose of procuring such victims. They were even made a subject of tribute. Devout people sometimes offered themselves or their children for the sacrifice. The number of victims, of course, varied from year to year, but it is possible that it counted up into the thousands every year.

What we are able to gather from the religious beliefs of the civilized nations sustains the conclusions we have already arrived at in reference to their culture. We can but believe this had been greatly overrated. It is the religion of barbarians, not of a cultivated and enlightened people the historians would have us believe in. It is a religion in keeping with the character of the people who had confederated together for the purpose of compelling unwilling tribute from weaker tribes. It is in keeping with what we would expect of a people

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still in the Stone Age, who still practised communism in living, and whose political and social organization was founded on the gens as a unit.

It will not be out of place to devote some space to a consideration of their advance in learning; and first of all let us see about their system of counting or numeration. This knowledge, as Mr. Gallatin remarks, must necessarily have preceded any knowledge of astronomy, or any effort to compute time. They must have known how to count the days of a year before they knew how many days it contained. We all know how natural it is for a child to count by means of his fingers. This was undoubtedly the first method employed by primitive man. Proof of this is found in the wide extended use of the decimal system. Among the civilized nations, traces of this early custom are still preserved in the meaning of the words used to express the numbers.

To express the numbers up to twenty, small dots or circles were used--one for each unit. For the number twenty they painted a little flag, for the number four hundred, a feather; and for eight thousand, a purse or pouch. The following table represents the method of enumeration employed by the Mexicans. But it is

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necessary to remark they used different terminations for different objects.

Illustration of Mexican System of Numeration.----------

Substantially the same system of numeration prevailed among all the Nahua tribes and the Mayas. It will be seen from this table that the only numbers having simple names are one, two, three, four, five, ten, fifteen, twenty, four hundred, and eight thousand. The other names are compounds of these simple names. It is also easy to understand their method of pictorial representation. In reference to the flag, the feather, and the purse, we must remark that, when these were divided into four parts, only the colored parts were counted. The collective number, used among them much as we use the word dozen, was always twenty; but queerly enough their word for twenty varied according to the object to be counted. The regular word given in the table was "pohualli." In counting thin objects that could be arranged one above the other, the word twenty was "pilli." Objects that were round and plump and thus resembling a stone, were counted with "tetl" for twenty, and other words for

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different objects.

The division of time or their calendar system, is one that was thought to show great advance in astronomical learning, but of late years it has been shown that this also was overrated. This question of how to keep a record of time was a difficult one for primitive man to solve; that is, when he began to think about it at all. A long while must have elapsed, and considerable advance in other respects been made before the necessity of such a thing occurred to them. The increase and decrease of the moon would form a natural starting point. It is well known that this is about as far as the knowledge of the Indians extended. The Maya word for month means also moon, showing this was their earliest system of reckoning time.

Illustration of Table of Days.----------

The various Nahua and Maya tribes of Mexico and Central America had reached about the same stage of development. But their calendar system is so similar that it affords a strong argument of the original unity of these people. All of the civilized

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tribes had months of twenty days each, and each of these days had a separate name, which was the same for every month of the year. This period of twenty days was properly their unit of time reckoning. It is true they had smaller divisions, but for all practical purposes, they were ignored. As none of these tribes possessed the art of writing, they had to represent these days by means of hieroglyphics. The following table shows the Mexican and Maya days, the meaning of each, and the pictorial sign by which they were represented. We must notice that the Maya hieroglyphics look more arbitrary, more conventional than the Mexican. This is interesting, because some of our scholars now believe the Mayas were the inventors of the calendar. Their hieroglyphics, therefore, as being the older of the two, should appear more conventional. In the Mexican hieroglyphics for the days, we can still trace a resemblance to the natural objects they represent; in the Maya hieroglyphics, this resemblance has disappeared.

It is not out of place to theorize as to the facts already mentioned. The first thing that strikes us is that they should have chosen twenty days for a unit of time. There must have been some reason lying back of this selection. It would have been more natural for them to have chosen a number of days (say

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thirty) more nearly corresponding to the time from one new moon to another. Whether we shall ever learn the reason for choosing this number of days is doubtful; but Mr. Bandelier has given us some thoughts on this subject, which, though he is careful to state are not results, but mere suggestions, seem to us to have some germs of truth, the more so as it is fully in keeping with Indian customs.

He points out that many of the names for these days mean the same as the names of the gens in the more northern Indian tribes. Thus seven of the days have the same meaning as the names of seven of the nine gens of the Moqui tribe in Arizona. He, therefore, suggests that the names of these twenty days are the names of the twenty gens of the aboriginal people from whom have descended the various civilized tribes under consideration. Indeed, this is expressly stated to be the method of naming the days adopted by the Chiapanecs, one of the tribes in question.

As soon as the people commenced to take any observation at all, they would perceive that it took just about eighteen of these periods of twenty days to make a year. So the next step appears to have been the division of the year into eighteen months.

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These months received each a name, and were of course designated by a hieroglyphic. The names of the Mexican months seem to have been determined by some of the feasts happening therein.

There is great diversity among the early writers both as to the names of these months, and the order in which they occur, as well as by the hieroglyphics by which they are represented.

It does not seem worth while to give their names and meaning.

We give a plate showing the name, order in which they occur, and hieroglyphic symbol of the Maya months. In point of fact, the months were very little used, as we shall soon see it was not necessary to name the month to designate the day; but of that hereafter.

Illustration of Maya Months.---------

But it would not take these people very long to discover that they had not hit on the length of a year. Eighteen months, of twenty days each, make only three hundred and sixty days; so the next step would be to add on five days to their former year.

As these days do not make a month, they were called the nameless days. They were considered as being unlucky--no important

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undertaking could be commenced on one of them. The child born therein was to be pitied. But we will see that the expression, "nameless days" was hardly the case among the Mayas, though it was among the Mexicans.

Perhaps this will be as good a place as any to inquire whether they had exact knowledge of the length of the year. As every one knows, the length of the year is three hundred and sixty-five and one quarter days, or very nearly; and for this reason we add an extra day to every fourth year. We would not expect to find this knowledge among tribes no farther advanced than we have found these to be. If, as our scholars suspect, the Maya be the one from which the others were derived, they would be apt to possess this knowledge, if known. Perez, however, could find no trace of it among them. Many authors have asserted that the Mexicans knew all about it. Some say they added a day every four years; others, that they waited fifty-two years, and then added thirteen days; and some, even, give them credit for still closer knowledge, and say they added twelve and one-half days every fifty-two years. Prof. Valentine, who has made their calendar system a special study, concludes that they knew nothing at all about the matter.

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The beginning of the year is variously stated. Among the Mexicans it seems that, while the authors differ very much, all but one places it on some day between the second day of February and the tenth of April. As their word for year means "new green," it is probable they placed its commencement about the time new grass appeared. The Mayas are said to have placed the commencement of the year about the sixteenth of July. As this happens to be just about the time that the sun is directly overhead in Yucatan, it has been surmised that the natives took astronomical observations, and tried to have their year commence at that time. But it must be manifest that, if they did not possess a knowledge of the true length of the year, and so make allowance for the leap-year, in the course of a very few years they would have to revise this date.

Refer once more to the Maya table of days. Suppose the first day of the year to commence with the day Kan. As there are twenty days in a month, we see that the second month would also commence with Kan. In like manner, Kan would be the first day of every month of that year. When the eighteen months were past, there would still remain the five days to complete the year. Now, although they were said to be nameless days, the Mayas gave them names. The first day was Kan, the second day Chichan, the

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third day Quimij, the fourth day Manik, the fifth day Lamat. The regular order of days we see. They were now ready to commence a new year.

The next day in the list is Muluc. This becomes the first day of the first month of the new year. But, being the first day of the first month, it was the first day of every month of that year. At the end of the eighteen months of that year, the five days would have to be named in their order again, which would carry us down to Gix, the first day of the first month of the third year. It would also be the first day of every month of that year. Similarly we see that Cavac would be the first day of every month of the fourth year. The fifth year would commence again with Kan. So we see that four of these twenty days became of more importance than the others. The years were named after them. The year in which the month commenced with Kan was also called Kan. The same way with the other days. So the name of the year was either Kan, Muluc, Gix, or Cavac. These four days were called "carriers of the year;" because they not only gave the name to the year, but because the name of the year was also the name of the first day of every month of that year.

The foregoing will help us to understand the Mexican method.

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Let us refer now to the list of Mexican days. The first day of the first month was Cipac. For the same reason as above set forth, this would be the first day of every month of the year. The five extra days either were not named at all, or at any rate they were not counted off in the table of days. The consequence was that Cipac was the first day of every month; for we have just seen that it was the first day of every month of the first year. At the end of the eighteen months the five nameless days would come in; but, as they did not form part of a month, were not named. The first day of the first month of the next year would be named as if they had not occurred. But, when they came to name the years, we find they proceeded on exactly the same principle as the Mayas. Thus four of the twenty days, occurring just five days apart, were taken to name the years. These days were Tecpatl, Calli, Tochtli, and Acatl.

Mr. Bandelier, who made the valuable suggestion in regard to the origin of the names of the days, has also suggested that, inasmuch as there are four of the days more prominent than the others, they may signify four original gentes, from which the others have come. It seem to us, however, when we notice they are just five days apart, that the system pursued by the Mayas in naming their years explains the whole matter.

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Before we mention the longer periods of time in use among them we must refer to another mode of reckoning time, and trace the influence of this second method on the one already named. The method already explained seems to have been a perfectly natural one--the second method is founded on superstition. A large part of the duties of the priests, we remember, was to determine lucky and unlucky days, and in soothsaying. For this purpose they made a peculiar division of time, which we will now try and explain.

For some cause or other, thirteen was a number continually recurring in their calendar. We can perceive no reason why it should have been chosen. It has been suggested that it was just about the time from the appearance of a new moon to its full. Be that as it may, the number of days thirteen comes very near to what we would call a week. Among the Mexicans, and probably among the Mayas, these thirteen days were divided into lucky, unlucky, and indifferent days, and were supposed to be under the guidance of different gods. The priests had regularly painted lists of them, with the deities which governed them. These lists were used in fortune telling.

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We must now inquire as to how they kept track of the years. The Mayas named their next longer period of time an ahau. There is some dispute as to what number of years it meant. Most of the early writers decide that it was twenty years; but Perez, whose work we have already referred to, contends that it was twenty-four years. And this conclusion seems to be confirmed by a careful study of some of their old manuscripts. Thirteen of these ahaus embraced their longest period of time, known as an ahau-katun. It had a length of either two hundred and sixty or three hundred and twelve years, according as we reckon either twenty or twenty-four years to an ahau. It may be that the length of an ahau varied among the different tribes of the Mayas.

The Mexicans also had this week of thirteen days. Twenty of these weeks, or two hundred and sixty days, formed that part of the year they called the moon-reckoning; the remainder of the year was the sun-reckoning. Their longer period of time was also based on this number. A period of thirteen years they called a tlapilli; four of these constituted a cycle equal to fifty-two years. The end of this cycle was anxiously awaited by the Mexicans. They supposed the world was to come to an end on one of these occasions. As the time drew near, the furniture was

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broken, the household gods were thrown into the water, the houses were cleaned, and finally, all the fires were extinguished. As the last day of the cycle drew to a close, the priests formed a procession, and set out for a mountain about six miles from Mexico. There an altar was built. At midnight a captive, the bravest and finest of their prisoners, was laid on it. A piece of wood was laid on his breast, and on this fire was built by twirling a stick. As soon as fire was produced, the prisoner was killed as a sacrifice. The production of new fire was proof that the gods had granted them a new period of fifty-two years.

To understand how the years in this cycle were arranged and numbered, we must refer once more to the Mayas, for though they did not use the cycle themselves, yet they give us a hint as to how it was obtained, and afford one more reason why we should think the Mayas were the originators of this calendar system. We give a table showing the arrangement of the days of the year among the Mayas. We will take the year Kan--that is, we remember, when Kan was the first day of every month. We would naturally think they would describe a day by giving the name of the day and the month--as, the day Kan, of the month Xul, or the first day of the month Xul--but instead of so doing, they made

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use of the period of thirteen days.

For instance, we see, by looking at the table, that the day ten Kan can not be any other day during the year than the day above mentioned; so that, for all purposes, it is sufficient to give the day and its number in the week. We notice, however, that the last five columns of figures for week days of thirteen are just the same as the first five. But this did not confuse any, for the last five columns of days belong to the "sun-reckoning," the others to the moon-reckoning. And though the number of the day in the week was the same, yet a different deity ruled over them than in the corresponding days of the first five columns. We can not affirm that we know this to be true of the Mayas. Such, however, we know to be the case among the Mexicans.

Illustration of Almanac for Maya Year "Kan"----------

Now we notice in this almanac that the last day of the year Kan, is number one of the week. As the count goes right along, the first day of the next year, Muluc, must be number two. If we would make an almanac for that year, we would find the first day

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of the third year would be number three of the week. If we were to continue this, we would find that the first days of the years, would range from one to thirteen. This table shows the number in the week of the first day of the first fourteen years. The first day of the fourteenth year would be number one of the week again, but this time one Muluc, and not Kan. If we would continue our researches, we would quickly discover that fifty-two years would go by before we would have a year Kan in which the first day of the year would be number one again.

No. in the week of the first day of the year.	Years.
1	Kan.
2	Muluc.
3	Gix.
4	Cavac.
5	Kan.
6	Muluc.
7	Gix.
8	Cavac.

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9	Kan.
10	Muluc.
11	Gix.
12	Cavac.
13	Kan.

1	Muluc.

We think the above explains the origin of the Mexican cycle of fifty-two years. The Mayas either never had this cycle, or had abandoned its use. The Mexicans however, used this period of time, and they numbered their years in it in such a way that we can not explain it, unless we suppose they derived it in some such a way as just set forth. We give a table showing the order of the years in a cycle, and also notice that all that was needed was the number and name of the year to show at once what year of the cycle it was. The year seven Calli, for instance, could never be any other year than the twentieth of the cycle.

ARRANGEMENT OF YEARS IN A MEXICAN CYCLE.

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No. Name of the Years.

1 Tochli..... Acatl..... Tecpatl..... Calli.....

2 Acatl..... Tecpatl..... Calli..... Tochli.....

3 Tecpatl..... Calli..... Tochli..... Acatl.....

4 Calli..... Tochli ..... Acatl..... Tecpatl.....

5 Tochli..... Acatl..... Tecpatl..... Calli.....

6 Acatl..... Tecpatl..... Calli..... Tochli.....

7 Tecpatl..... Calli..... Tochli..... Acatl.....

8 Calli..... Tochli..... Acatl..... Tecpatl.....

9 Tochli..... Acatl..... Tecpatl..... Calli.....

10 Acatl..... Tecpatl..... Calli..... Tochli.....

11 Tecpatl..... Calli..... Tochli..... Acatl.....

12 Calli..... Tochli..... Acatl..... Tecpatl.....

13 Tochli..... Acatl..... Tecpatl..... Calli.....

Illustration of Day Date.----------

Illustration of Year Date.----------

To express the dates, they of course painted the hieroglyphic of the day, and dots for the number of days. This cut, for instance, expresses the day-date "seven Acatl." They generally

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wrote the dots in sets of five. Seven was sometimes expressed in the above manner. When they wished to express a year-date, they made a little frame and painted in the hieroglyphics of the year, and dots for the number. This date here expressed is their thirteen Acatl, which, by the above table, is seen to be the twenty-sixth year of the cycle.

We have already dwelt too long on this part of the subject. Glancing back over the ground, we see there is nothing implying astronomical knowledge, more than we would expect to find among a rude people. We find there are several particulars of the Mexican system which we could not understand, except by reference to the Maya system. It would bother us to explain why they should choose the days Tochli, Acatl, Tecpatl, and Calli, to be the names of their years, if we did not know how the Mayas proceeded. We would be at a loss to explain why they choose the number of fifty-two years for the cycle, and arranged their years in it as they did, if we had not learned the secret from the construction of the Mayas' almanac. From this comparison, we should say the Mexican calendar was the simpler of the two. As the Mayas had twenty days in the month, and, for priestly use, weeks of thirteen days, so they took twenty years, which, as they imagined, were supported by four other years, as a

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pedestal for their next longer period, the ahau; and for apparently no other reason than that they had weeks of thirteen days, they took thirteen of these ahuas for their longest period of time. They did not use the cycle of fifty-two years, but they numbered their years in such a way that, in effect, they were possessed of it. The Mexican did away with all but the cycle of fifty-two years.

Illustration of Calendar Stone.----------

No account of the calendar system of the Mexicans would be complete without reference to the so-called calendar stone. The stone, the face of which is sculptured as represented in this cut, was dug up from the square in front of the cathedral of the City of Mexico, where it had been buried in 1557. When the temple was destroyed, this stone still remained entire. Finally the authorities, fearing it attracted too much attention from the natives, ordered it buried. It was brought to light again in 1790, but its early history was completely forgotten. The astronomer Gama pronounced it a calendar stone, and his interpretation of the characters engraved on it have been the

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foundation for the idea that the Mexicans had considerable knowledge of astronomy. Prof. Valentine and others have, however, shown that it was simply a sacrificial stone, which the artist had decorated in a peculiar manner. This stone is considered by some to be so important that we will condense Prof. Valentine's description of it as being the best at hand. Not all of out scholars accept it, however. The central figure is the face of the sun-god. It is decorated in a truly savage style. It has ear-rings, neck-chain, lip-pendant, feathers, etc. The artist's design has been to surround this central figure with all the symbols of time. We notice on each side of the sun a small circle or oval with hieroglyphics resembling claws. In Mexican traditions these represent two ancient astrologers who were supposed to have invented the calendar. According to Nahua traditions of the world, there had been four ages of the world; at the end of each age, the world was destroyed. Right above and below the ovals with the claws, we see four squares containing hieroglyphics.

Each of these squares refers to one of the destructions of the world. The upper right hand square contains the head of a tiger. This represents the first destruction of the world, which was by tigers. The four dots seen, in this square do not refer to a

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date as they generally do; it is a sacred number, and constantly reappears in all hieroglyphics referring to feasts of the sun. To the left of this square, crowded between it and the pointer, can be seen the hieroglyphic of the day Tecpatl. The little dot is one, so this day one tecpatl probably refers to the day in which the feast in reference to this destruction was celebrated. The second age was terminated by a hurricane. The upper left hand square containing the hieroglyphic for wind refers to this destruction. Between this square and the pointer is crowded in the hieroglyphic of one Calli, referring to the feast in memory of this destruction. The third destruction of the world was by rain, the lower left hand square containing the hieroglyphic of rain. Below, not very distinctly, is the date of this feast, one quiahuitl. The last destruction was by water, represented by the lower right hand square. The date of this feast as represented below is seven Ozomatl.

Passing out of this central zone we notice the hieroglyphics for the days of the month arranged in a circle. The A shaped ray from the head of the sun indicates where we are to commence to read; and we notice they must be read from right to left. Resting on this circle of day, we notice four great pointers not unlike a large capital A. They are supposed to refer to sunrise,

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noon, sunset, and midnight. Next in order after the days we notice a circle of little squares, each containing five dots. Making allowance for the space covered by the legs of the pointers just mentioned, there are found to be two hundred and sixty of these days; they, therefore, refer to the days of the moon reckoning. We notice four smaller pointers not quite so elaborate as those already referred to, resting in this circle. They probably refer to smaller divisions of the days. The next circle contains a row of glyphs not unlike kernels of corn. One hundred and five are represented on this circle; they refer to the days of the sun reckoning.

Illustration of Sign of Rain.----------

Resting on this circle of days are small towers; they, like the smaller pointers, refer to divisions of the day. Adjoining each of these little towers is a figure; this cut represents one of them. We notice they form a circle extending clear around the stone. The meaning of this circle is gathered from other painted records. It represents a rain storm; four drops are seen falling to the ground. The ground is cultivated, as shown by the three

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ridges; a grain of corn is represented lying on the ground. This band on the stone is in honor of the rain-god.

Illustration of Sign of Cycle.----------

There remains only to explain the outer row or band. At the bottom is a rude representation of two heads with helmets. The meaning of these figures is unknown. From each of these figures extend in a semicircle a row of figures of this shape, ending with pointers at the top, between which is a year-date. Near the points on each side is what might be described as four bundles tied together. Each of the small figures just described is the representation of a cycle of fifty-two years.

The date on the top is the year date, Thirteen Acatl. This is an easily determinable date. From Mexican paintings, we know the conquest of Mexico occurred in the year Three Calli. From this tracing their years back by the table given earlier (Arrangement of Years in a Mexican Cycle), we would find that the first Thirteen Acatl we meet was in the year 1479. This is exactly the date when, according to tradition, the great temple was

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finished, and this stone dedicated by bloody sacrifices. If we count the number of signs for cycles, we find that there are just twelve on each side, twenty-four in all. As the artist could easily have made this number more or less, the probabilities are that it means something. The most plausible explanation is, that in the year 1479, they had traditions of twenty-four cycles. But this number of cycles is equivalent to twelve hundred and forty-eight years, which would carry us back to about the year 231, A.D., which date we must bear in mind; not that we think there is any scientific value to it, but for its bearing on other matter at the close of the chapter.

We come now to consider the subject of their picture writings. The germ of writing is found in the rude attempts to assist the memory to recall past events. Some of the northern Indian tribes resorted for this purpose to belts of wampum. When a new sachem was to be invested with office among the Iroquois, the historical wampum belts were produced; an old man taking them in hand, and walking back and forth, proceeded to "read" from them the principles of the confederacy. In this case, particular events were connected with particular strings of wampum. Pictorial representation would be the next stage. At first the aim of the artist would be to make his drawings as perfect as

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possible. A desire to save labor would soon lead them to use only the lines necessary to show what was meant. This seems to be about the stage of picture writing, reached by some Indian tribes, who have left here and there specimens carved on rocks.

Illustration of Indian Picture Writing.----------

This cut is a specimen of such writing from the canyon of the San Juan in Arizona. Although quite impossible to read it, there is no doubt but what it expressed a meaning at the time it was engraved.

Illustration of Chapultepec.----------

From this stage of development would naturally arise symbolical paintings. Thus "footsteps" might signify the idea of going. A comma-shaped figure, issuing from a person's mouth, would stand for speech. The next step is what we might call rebus-writing, where not the thing itself was meant but the

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sound. Thus this cut represents Chapultepec--meaning grasshopper-hill, or locust mount. It is evident, here, the pictures of the objects represent the name. They, probably, did not use this principle farther than to represent the proper names of persons and things before the coming of the Spaniards.

Illustration of Amen.----------

Some think that, in addition to the above, the Mexicans used, to a very limited extent, a true phonetic writing--one in which the figures refer not to the thought, but to the sound of the thought. Others are not ready to concede that point. They could not have been further along than the threshold of the discovery, at all events. The Spanish missionaries were very desirous of teaching the Indians the Pater-noster, the Ave-Maria, and the Credo. Either the Indians themselves, or the priests (probably the latter), hit on the device of using painted symbols for the words and syllables of the church prayers and formulas. Thus in this manner was painted the word Amen. The first sign is the conventional figure for water, in Mexican "atl, which stood for A. For the second syllable they

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put the picture of a maguey plant, in Mexican "metl." The whole, then, was "atl-metl," which was as near as they could express the word amen. We must observe, that this was after the conquest.

Illustration of Historical Sheet.----------

The plate opposite is one of the paintings of the Mendoza collection. This collection, we must remember, was made after the conquest, simply to gratify the curiosity of the King of Spain. The matter treated of is the events connected with time when Motecuma the fifth "chief-of-men" held office. Around the edge we see the hieroglyphics of the years. We notice he was chief-of-men from the year one calli to two tecpatl. About the only thing recorded of him is the different pueblos he conquered. In all he subdued thirty-three; but only eleven are shown in this plate. The pueblos are indicated by a house toppling over--flames issuing from under the roof. The other little hieroglyphics are the names of the pueblos. The last one in the second transverse line from the bottom is the hieroglyphic of Chalco, which we thus learn was reduced to

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tribute under this chief. All the events indicated in this cut took place before the discovery of America.

Illustration of Chilapi--Tribute.----------

A second part of this codex has reference to the tribute received from various tribes. In this cut the left-hand figure is the hieroglyphic of the town of Chilapi, and is an excellent representation of their rebus-writing we have just referred to. It is a tub of water, on which floats a red-pepper pod. The Mexican word for this last is chilli, for water it is "atl.". The word "pa" means above. For the full word we have "chilli-atl-pa." Contracted, it becomes chilapi. The figure to the right is the tribute. The five flags denotes one hundred. Below is represented a copper ax-blade--from which we infer that the Pueblo of Chilapi had to furnish a tribute of one hundred copper axes.

Illustration of Child Training.----------

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A third part of this same collection refers to the Mexican customs. In this cut we have represented the training of a boy at the different ages of four, six, thirteen and fourteen years of age. The little round marks number the years of his age. The little elliptical-shaped figures show the number of tortullas the child is allowed at a meal. The boy is trained to carry and make various things, to row a boat, and to fish.

Illustration of Migration Chart.----------

The most interesting of Mexican picture-writings is the record of their wanderings. This was formerly supposed to represent their migrations from Asia--but is now known to refer only to their wanderings in the Valley of Mexico. De Lafield, in his "Antiquities of America," gives a full representation of this picture-writing. Bancroft's "Native Races," Vol. II, pp. 548-49, give a very good reduced copy. We will not attempt to reproduce it all. This cut represents the beginning of it. A man is seen crossing a stream in a boat. The figure behind him may mean an island, on which are represented some pueblos and human figures.

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On the opposite bank of the stream, to which the footsteps lead, is the hieroglyphic of Culhuacan, "the curved mountain." The year date of this movement is "one tecpatl." The character within that of Culhuacan is Huitzilopochtli, their national god. The flakes issuing from his mouth signify that he is guiding them. The principal figures about this map are the hieroglyphic names of various places where they stopped, and the time spent at each place.

The Mayas seem to have been further advanced in the art of writing than their Nahua neighbors. Specimens of their hieroglyphic writings have been given in the preceding chapter. The hopes of our scholars were greatly raised when, in 1863, the announcement was made that there had been discovered, in Madrid, a Maya alphabet, which, it was expected, would unlock the mysterious tablets just mentioned.

The alphabet thus discovered is represented in the next cut. It will be seen that some of the letters have a number of different forms. This discovery was hailed as of the greatest importance, and a number of scholars at once set about to decipher the tablets. They were speedily undeceived. The alphabet is, practically, of no help whatever.

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Prof. Valentine even goes so far as to declare that this alphabet was not of native origin.

Illustration of Landa Alphabet.----------

Illustration of Maya T.----------

He thinks that Bishop Landa, who is the authority for this alphabet, and who was Bishop of Yucatan from 1549 to 1579, being anxious to assist the natives in learning the new faith, set about the manufacture of an alphabet for them. This he did by having the natives paint some native object which came the nearest to the sound of our alphabet. Thus, for instance, this symbol there are excellent reasons for supposing represents the sun, or the word "day." The Maya word for this is *te*. We find that this is the symbol that Landa employs for the letter T, only, in his drawing, the central dot has fallen into the lower dashes. Nearly all the other letters can be traced to a similar source. But the professor's reasoning does not satisfy all. He is believed to be right in a number of his

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identifications; but still the characters might have been used in a phonetic way.

Illustration of Maya Manuscript.----------

There is no doubt but that the Mayas had a different system than that in use among the Nahua people. The knowledge how to use it was, probably, confined to the priests; and, furthermore, the system was, doubtless, a mixed one. A few phonetic characters might have been used; but they also used picture-writing. The plate above is a sample of the manuscripts they left behind. It is in the nature of a religious almanac, and refers to the feasts celebrated at the end of a year. The line of characters on the left hand are the days characters Eb and Been. In the lower division, a priest offers a headless fowl to the idol on the left. In the middle division, the priest is burning incense to drive away the evil-spirit. In the upper division, the assistant, with the idol on his back, is on his march through the village. As yet, we know but very little about the tables. We know the hieroglyphics of days and of months.

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Illustration of Hieroglyphics--Tablet of the Cross.------

Examining the tablets in the Temple of the Cross, at Palenque, represented below, we notice a large glyph, at the commencement of the tablet, something like a capital letter. This, Mr. Valentine thinks, represents the censers which stood in the temples before the idols, in which fire was constantly kept. Running through the tablets we notice glyphs, in front of which are either little dots, or one or more bars with little dots in front of them. These are day-dates. The dots count one--the little upright bars, five. The probabilities are that this tablet is a sort of list of feast-days in honor of the gods represented by the central tablet.

As we have made a considerable effort to acquaint ourselves with the social organization and customs of the various tribes, and have spent some time in learning the details of their calendar system, and their advance in the art of writing, it will not be out of place to inquire as to their history--to determine, if possible, some of the dates to be given for the arrival of the tribes, and some of the important points of their prehistoric

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life. Whatever difficulties we have experienced in acquiring a knowledge of their customs will be greatly increased now. Their architecture, social organization, and general enlightenment could be perceived by the conquering Spaniards, and our information in regard to the same should have been full and complete. We have seen, however, how meager it is. The only light thrown on these disputed points is the result of the labors of modern scholars. When we were made acquainted with some of the first principles of Indian society, we could read with profit the accounts of the early writers.

But, when we come to ask for dates in their history, we are almost entirely at sea. The traditions, in this respect, are almost worthless. So, all that we shall attempt to do, is to present some of the thoughts of our scholars as to the probable connection of the civilized tribes with each other, and what value is to be given to the few dates at our command. We will begin, first, with the Maya tribes. This includes those tribes that speak the Maya language, and its dialects. It was in their territory that the most striking ruins were found. They include the tribes of Yucatan, Guatemala, Chiapas, and Tobasco. Then there comes a break; but they were also settled on both banks of the River Panuco. Many theories have been advanced as

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to the origin of the Mayas. As yet, the question is not solved.

Not a few have supposed them to be the same as the Mound Builders of the United States. Dr. Brinton has pointed out that the language of the Natchez Indians contains some words of the Maya. A Mexican scholar, Senor Orozco-y-Berra, thinks it probable that the Mayas once occupied the Atlantic sea-board of the United States; that they passed from the peninsula of Florida to Cuba, and thence to the other Caribbean Islands, and so to Yucatan. He states that the traditions of the Mayas uphold this view. But others are not ready to admit it. We have found a number of points of resemblance between the Mayas and the Nahuas. Differences we would, of course, expect to find; but still the points of resemblance are sufficiently strong to indicate either that the tribes were once subject to the same influence, from whence they derived their culture, or else that they are descended from the same stock. We have reverted to the worship of Quetzalcohuatl, and shown how the Quiches, under the name of Gucumatz, worshiped a similar deity. We have also referred to the great similarity of the calendar system.

From the limited space at our command, it is not possible to refer to the traditions of the Maya tribes. We will refer to but

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one manuscript bearing on this question; but this is, probably, the most important one. This manuscript was written by a native with the Spanish letter, but in the Maya language. It was written not far from the time of the conquest of Yucatan by the Spaniards, and the account is, doubtless, as full a one, from the native stand-point, as can be given. The period of time used by the author is Ahau, which we have seen is either twenty, or twenty-four years.

Carefully going over this manuscript, Prof. Valentine arrives at the following conclusions: About the Year 137, A.D., the Mayas started from some place they called Tulla, or Tullapan, on their migration. Where this place was we do not know. The traditions of all the civilized nations refer to this place as a starting-point. It was a "land of abundance." It may be that this was but some fabled place, such as almost all primitive people have traditions of. About the year 231, A.D., they arrived on the coast of Central America, and spread themselves over a large part of it. This same manuscript speaks of the "discovery" of Chichen-Itza, 522, A.D. The date of the founding of Uxmal is given as about the year 1000, A.D. From 1000 to 1200, A.D., was the golden era of the Mayas in Yucatan.

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The tribes at Uxmal, Mayapan, and Chichen-Itza formed a confederacy of which Mayapan seems to have been the head. About the year 1200, inter-tribal war broke out. It seems to have been caused by the arrival of Nahua tribes, who established themselves in Mayapan. They were finally expelled, but they left the Mayas in such a state of exhaustion that they could not present a united front against the Spaniards. Such are the conclusions of Prof. Valentine. He estimates the length of an Ahau at twenty years, and it does seem that the author of the manuscript used that number of years.

Of the other branch of the civilized tribes we know but very little. The historical picture writings of the Mendoza collection, a collection compiled, remember, after the conquest, and, therefore, representing the traditions then current among the Mexicans, takes us back to 1325, A.D., to the first settlement in the Pueblo of Mexico. Sahagun, a Franciscan monk, who went to Mexico as early as the year 1529, and remained there until his death in 1590, wrote a very voluminous account of the Mexicans, their customs and history, and as he was in Mexico at the time when their traditions were still fresh in the minds of the natives, his account is probably as good as any. He obtained his information in a very credible manner. He gathered together

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some old Indians, well acquainted with the traditional history of their country. They are supposed to have "refreshed" their memory by inspecting a number of picture writings, which have since disappeared.

It is manifest that this history is valuable, just in proportion as the traditions are valuable. He makes one statement that Prof. Valentine has dwelt upon with great ability. He states that numberless years ago the first settlers came in ships and landed at a northern port, which, from that cause, was called Pauntla. This is supposed to be the Panuco River. After they had settled here, a large part of them, including their leaders and the priests, went off south; Sahagun says as far as Guatemala. The party left behind organized themselves into an independent body. They reconstructed from memory the calendar; they increased and became powerful, until pushing over the mountain, they built the pyramid of Cholula, and finally reached the city of Teotihuacan, where they built a central sanctuary. For some reason they abandoned their homes, all except the Otomies, and wandered off across the plains, and high, cold, desert places, that they might discover new lands.

No dates are mentioned for these occurrences, and we are not

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aware that this tradition is mentioned by other writers.
We recall that from the mouth of the Panuco River southward, we found evidence of considerable population in olden times.
We also recall that in this section are the ruined pyramids of Tuzpan and Papantla. Prof. Valentine is inclined to think that this date is referred to on the calendar stone; that is, 231 A.D. Just twenty-four cycles elapsed from this time to the date of the dedication of the calendar stone in 1479.

He also thinks that the Maya traditions refer to this same occurrence. One more reference to this same mysterious date is contained in the traditions of the Tezcucan tribe. According to the traditions, the beginning of things were in the year 245 A.D. According to this view, then, the ancestors of both Nahua and Maya people appeared on the gulf coast about 231 A.D.; in the same place where a Maya-speaking tribe are found to-day. From here those who developed the Maya culture went to the south and south-west; those who developed the Nahua went to the west and north-west.

We do not profess to be a judge as to the value of this tradition. Our scholars will, probably, at no distant day, come to more definite conclusions in the matter. Prof. Short thinks

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the strangers who at this early time made their appearance on the gulf shore were colonies of Mound Builders from the Mississippi Valley. We think it best to be very cautious about coming to any such conclusions. We must not forget that back of the twelfth century is nothing but vague traditions. Mr. Bandelier tells us that "nothing positive can be gathered, except that even during the earliest times Mexico was settled or overrun by sedentary, as well as by nomadic tribes that both acknowledged a common origin." The savage tribes have the general name of Chichimecas, but by right this term ought to be applied to the sedentary tribes as well; however, the word Toltec stands for these sedentary tribes. We have all read about the great Toltec Empire in Mexico. This is a ridiculous use of words. There was no tribe or nation of people of the name of Toltecs. All these prehistoric aborigines were probably Chichimecas; but by Toltecs we refer to the sedentary tribes, the skillful workers among them. If we are to judge any thing of traditions, the original home of these people were somewhere to the north of Mexico.

There was doubtless the usual state of inter-tribal warfare, but after a prolonged period the sedentary tribes--the Toltecs--were exterminated or expelled. Their successors were utter savages,

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coming from the north also. We doubt very much whether any date can be given for this event, but traditions assign it to about the year 1064. Prof. Valentine thinks he finds a reference to it in the calendar of stone. If we will notice, in the outer band near the top are four little bundles, or knots, in all, eight. We are told that each of these bundles refers to a cycle of fifty-two years, or in all four hundred and sixteen years. The date of the inauguration of the stone is 1479. If we subtract the number of years just mentioned, we have the date 1063. Whether this is simply a coincidence, or was really intended to refer to that event, we can not say.

Considerable speculations have been indulged in as to where the Toltecs went when driven out of Mexico. Some have supposed they went to Yucatan, and that to them we are to look for the builders of the ruined cities. This is the view of a very late explorer, M. Charney. Some have supposed we yet see certain traces of their presence in Guatemala, where they helped to build up a great Quexche "monarchy." But we know very little about it. It is not probable that more than a feeble remnant of them escaped with their lives.

From the same mysterious regions from where had issued the

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aboriginal Chichimecas and Toltec people, there subsequently came still other bands of sedentary Indians, who finally came to settle around the lakes of Anahuac. These settlers all spoke closely related dialects of the same language as their predecessors, the Toltecs. Finally the Aztecs appeared on the scene, coming from the same mysterious land of the "Seven Caves." According to their historical picture-writings, they founded the Pueblo of Mexico in 1325. It is somewhat singular that no record of this event appears on the calendar stone. If the artist was ingenious enough, as Prof. Valentine thinks he was, to represent the dispersion of the Toltecs in the eleventh century, he surely would have found some way to refer to such an important event as the founding of their Pueblo. From this date the Mexicans steadily rose in power, until they finally became the leading power of the valley.

REFERENCES

(1) The manuscript of this chapter was submitted to A. F. Bandelier for criticism. The part bearing on religion was subsequently rewritten. Absence from the country prevented his examining it.

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(2) Mr. Bandelier is the author of three essays on the culture of the ancient Mexicans. These are published in Volume II of "Peabody Museum Reports." We wish to make a general reference to these essays. They are invaluable to the student. Every position is sustained by numerous quotations from the early writers. In order to save constant references to them, we will here state that, unless other authorities are given for striking statements as to the culture of the Mexicans, their social organizations, etc., it is understood that our authority is found in these essays.

(3) In Mexican, "Tlaca-tecuhtli."

(4) Bancroft's "Native Races," Vol. II, p. 572.

(5) "Contribution to North American Ethnology," Vol. IV, p. 229.

(6) Morgan's "Contributions to N.A. Ethnology," p. 256.

(7) Bancroft's "Native Races," Vol. II, p. 576.

(8) "Who over heard of an imperfectly developed race decorating so profusely and so delicately their ordinary abodes, in a manner usually reserved for temples and palaces?" S. F. Haven, in Proceedings of Am. Antiq. Society, April, 1880, p. 57.

(9) Morgan's "Contribution to N.A. Ethnology," Vol. IV, p. 186.

(10) Cortez saw "trinkets made of gold and silver, of lead, bronze, copper, and tin." They were on the confines of a true Bronze Age. Proceedings of Am. Antiq. Society, April, 1879,

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p. 81.

(11) "History of the Conquest of Mexico."

(12) Bancroft's "Native Races," Vol. II.

(13) "History of America," 1818, Vol. III, book viii, p. 9.

(14) Wilson's "Conquest of Mexico."

(15) Morgan's "Ancient Society," p. 91.

(16) But, on this point, see "Peabody Reports," Vol. II, p. 685 --note, p. 282.

(17) Morgan's "Ancient Society," p. 197.

(18) Ibid., p. 205.

(19) "Ancient Society," p. 118.

(20) Morgan's "Ancient Society," p. 147.

(21) We refer again to Mr. Bandelier's articles. A careful reading of them will convince any one that the picture of Mexican Government as set forth in Mr. Bancroft's "Native Races," Vol. II, is very erroneous. Mr. Bancroft's views are, however, those of many writers.

(22) "Ancient Society," p. 528.

(23) Morgan's "Ancient Society," p. 537.

(24) Bancroft's "Native Races," Vol. II, p. 435.

(25) It is needless to remark that these results are greatly at variance with those generally held, as will be seen by consulting Mr. Bancroft's "Native Races," Vol. II, Chap. xiv.

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Mr. Bancroft, however, simply gathers together what other writers have stated on this subject. We follow, in this matter, the conclusions of an acknowledged leader in this field, Mr. Bandelier, who has fully worked out Mr. Morgan's views, advanced in "Ancient Society."

(26) Morgan's "Ancient Society," p. 193.

(27) Bancroft's "Native Races," Vol. II, p. 95.

(28) Morgan's "Ancient Society," p. 194.

(29) Bancroft's "Native Races," Vol. II, p. 94.

(30) Morgan's "Ancient Society," p. 195.

(31) Bancroft's "Native Races," Vol. I, p. 344.

(32) Valentine, in Proceedings of American Antiquarian Society, April, 1879.

(33) Gallatin: "American Ethnological Society's Transactions," Vol. I, p. 119.

(34) Valentine: Proceedings American Antiq. Soc., October, 1880, p. 75.

(35) Bancroft's "Native Races," Vol. II, p. 381. Proceedings American Antiquarian Society, April, 1879, p. 110.

(36) Bancroft's "Native Races," Vol. II, p. 193.

(37) "Fifth Annual Report Archaeological Institute of America," p. 83.

(38) Bancroft's "Native Races," Vol. II, p. 389.

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(39) Bancroft's "Native Races," Vol. II, p. 325.

(40) Valentine: Proceedings Am. Antiq. Society, April, 1879, p. 90.

(41) Ibid., p. 111.

(42) *North American Review,* Oct. 1880, p. 310.

(43) See "Copper Age in Wisconsin," in Proceedings American Antiquarian Society, No. 69, p. 57.

(44) Bancroft's "Native Races," Vol. II, p. 483.

(45) Proceedings Am. Antiq. Society, Oct., 1881, P. 66. (Valentine.)

(46) Proceedings Am. Antiq. Society, Oct., 1881, p. 66. (Valentine.)

(47) Bancroft's "Native Races," Vol. II, p. 489.

(48) Bancroft's "Native Races," Vol. III, pp. 182-199. In this connection, see also Bandolier: "An Archaeological Tour in Mexico," p. 185, note 2. It seems that none of the early writers speak of such a belief. The idea of one single God is first found in the writings of Ixtilxochitl.

(49) Brinton's "Myths of the New World," p. 45.

(50) Tezcatlipoca, the tutelar deity of Tezcuco; Huitzilopochtli, the tutelar deity of Mexico; Camaxtli, the tutelar deity of Tlaxcala; Quetzalcohuatl, the tutelar deity of Cholula.

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(51) Bandelier: "An Archaeological Tour in Mexico," p. 188.

(52) This subject is fully treated of in Brinton's "Myths of the New World."

(53) "Among the Indians it is very easy to become deified. The development of the Montezuma myth among the Pueblo Indians of New Mexico is an instance." (Bandelier.)

(54) Brinton's "Myths of the New World."

(55) Bandelier: "An Archaeological Tour in Mexico." pp. 168-213.

(56) Bancroft's "Native Races," Vol. III, p. 298, note 9.

(57) "American Antiquarian," January, 1883, p. 78.

(58) "An Archaeological Tour in Mexico," p. 67.

(59) "Peabody Museum Reports," Vol. II, p. 600. Dr. Brinton in "Myths of the New World," p. 281, gives some instances that might be thought to show the contrary. But even in those extracts we notice the parties had to deserve the office, and that in no case was it confined to certain persons.

(60) Bancroft: "Native Races," Vol. III, p. 335.

(61) Bancroft: "Native Races," Vol. II, p. 500.

(62) Mr. Bandelier remarks that the numbers from five to ten should be macuil-pa-oc-ce, etc. We give the same table as both Mr. Gallatin and Mr Bancroft.

(63) For authorities on this subject see Gallatin in "American Ethnological Society's Transactions," Vol. I, p, 49; Bancroft's

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"Native Races," Vol. II, p. 497; Valentine, in Am. Antiq. Soc. Proceedings, Oct., 1880, p. 61.

(64) Perez "Chronology of Yucatan," in Stephens's "Yucatan," Vol. I, p. 435.

(65) See Valentine: "The Katunes of Maya History," in Proceedings Am. Antiq. Soc., October, 1879, p. 114.

(66) We refer to the division of five days, not to the thirteen day period, of which we will soon speak.

(67) Bandelier: "Peabody Museum Reports," Vol. II, p. 579. Note 29.

(68) Mr. Bancroft, "Native Races," p. 508, gives a table showing the variation of authors in this respect. Gallatin "American Ethnological Society's Transactions," Vol. I, p. 66, says, "the published hieroglyphics are dissimilar in many respects."

(69) Stephens's "Yucatan," Vol. I, p. 438.

(70) Bancroft's "Native Races," Vol. II, p. 513, note 15.

(71) Proceedings Am. Antiq. Society, April, 1878, p. 99.

(72) Gallatin: "American Ethnological Soc. Trans.," Vol. I, p. 71.

(73) See Valentine, in Proceedings American Antiq. Society, April, 1878, p. 106. Gallatin, who is also good authority, gives the order different, viz., Tochtli, Acatl, Tecpatl, Calli.

(74) Valentine: Proceedings Am. Antiq. Soc., Oct., 1879, p. 84,

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et seq.

(75) Thomas: "A study of the Manuscript Troano," in "Contributions to North American Ethnology," Vol. V, p. 29.

(76) According to the teachings of the Mexican priests nine deities governed the days. They had painted lists of these weeks, and the deities governing each.

(77) Valentine: Proceedings Am. Antiq. Soc., Oct., 1879, p. 85.

(78) In this table we have followed Mr. Gallatin. According to Prof. Valentine, the order of the years is different. This, however, is immaterial to an understanding of the system.

(79) Gallatin: "Am. Eth. Soc. Transactions," Vol. I, p. 94, *et seq.*

(80) Thus says Prof. Valentine. The cast of this stone in the Smithsonian Institution gives the date eight, instead of seven Ozomatl.

(81) For information on the Calendar Stone, consult, "American Ethnological Society's Transactions," Vol. I, p. 94, *et seq.;* Bancroft's "Native Races," Vol. II, chap. xvi, and p. 755, *et seq.;* Valentine: American Antiquarian Society's Proceedings, April, 1878, p. 92, *et seq.;* Short's "North Americans of Antiquity," p. 419, *et seq.*

(82) Morgan's "Ancient Society," p. 143.

(83) Brinton: "Introduction to the Study of the Manuscript

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Troano."

(84) Valentine: Proceedings of American Antiquarian Society, April, 1880.

(85) Gallatin: "American Ethnological Society's Transactions," Vol. I, p. 131.

(86) Valentine: Amer. Antiq. Society's Transactions, April, 1880, pp. 59-91.

(87) Brinton's "Introduction to Study of manuscript Troans," p. xxvi.

(88) American Antiquarian Society, April, 1881, p. 294.

(89) "Myths of the New World." The doctor now thinks his statement just referred to, too strong. There is, indeed, a resemblance, as he pointed out; but it is not strong enough to found any theories on.

(90) Short's "North Americans of Antiquity," p. 474.

(91) Brinton's "Myths of the New World."

(92) This historical manuscript represents the traditions of the Maya people shortly after the conquest. It is very likely its author had before him picture records of what he wrote. Such records have since disappeared. The manuscript itself, the interpretation of it, and Perez's remarks are found in Stephen's "Yucatan," Vol. II, Appendix. The same in Bancroft's "Native Races," Vol. V, p. 628. The fullest and most complete discussion

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is by Prof. Valentine in Proceedings Am. Antiq. Soc., October, 1879, p. 80, *et seq*. Whether there is any thing worthy of the name of history is doubtful.

(93) Proceedings Am. Antiq. Society, Oct., 1882.

(94) "North Americans of Antiquity," p. 578.

(95) "Peabody Museum Reports," Vol. II, p. 387.

(96) Valentine: Proceedings Am. Antiq. Society, October, 1882, p. 209.

(97) *North American Review,* from Sept., 1880, to 1883.

(98) Short's "North Americans of Antiquity," p. 218.

(99) This historical notice is a mere outline. Such, however, is all we wished to give. Those who wish for more details can not do better than to refer to Mr. Bancroft's fifth volume on the "Native Races." We do not believe, however, that any thing definite is known of the early periods of which some writers give such glowing descriptions. When they talk about the doings of monarchs, the rise and fall of dynasties, and royal governors, we must remember the majority of the descriptive matter is mere nonsense, consequently our faith in the dates given can not be very great.

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END OF CHAPTER XV.**********

The Prehistoric World: or, Vanished Races

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Chapter XVI.

ANCIENT PERU.

First knowledge of Peru--Expeditions of Pizarro--Geography of Peru--But a small part of it inhabitable--The tribes of ancient Peru--How classified--Sources of our knowledge of Peru--Garcillasso De La Vega--Origin of Peruvian civilization--The Bolson of Cuzco--Historical outline--Their culture--Divided into phratries and gentes--Government--Efforts to unite the various tribes--Their system of colonies--The roads of the Incas--The

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ruins of Chimu--The arts of the Chimu people--The manufacture of pottery--Excavation at Ancon--Ruins in the Huatica Valley--The construction of a Huaca--The ruins at Pachacamac--The valley of the Canete--The Chincha Islands--Tiahuanuco--Carved gateway--The Island of Titicaca--Chulpas--Ruins at Cannar--Aboriginal Cuzco--Temple of the Sun--The Fortress--General remarks.

The early part of the sixteenth century was surely a stirring time in the world's history. The night of the Dark Ages was passing off of the Old World; the darker gloom of prehistoric times was lifting from off the New. Spanish discoveries followed each other in rapid succession in the South. As yet, they supposed these discoveries to be along the eastern shores of Asia, but, in 1513, Balboa, from a mountain peak, in Darien, saw the gleam of the great Pacific, which intervenes between America and Asia. At the same time he was informed there was a country to the southward where gold was in common use, and of as little value among the people as iron among the Spaniards. As gold was what the Spaniards most desired, we can imagine how they rejoiced over such information.

The rich country of which Balboa was thus informed was later known as Peru. Balboa himself did not attempt its discovery.

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There was no lack, however, of those who wished to achieve fame and fortune by so doing. Among other restless spirits who had been attracted to the New World, was Francisco Pizarro. He had been associated with Balboa in founding the settlement of Darien, and, of course, he was among the first to hear of the marvelous country farther south. In 1518, Panama, on the Pacific coast, was made the seat of government for the Spaniards in that section of the country. Pizarro was one of the first there--his services had been rewarded by the grant of an estate.
The historian of his expedition speaks of him as "one of the principal men of the land, possessing his house, his farm, and his Indians." We need not doubt but what he often pondered over his knowledge of the rich country south. He was well acquainted with Indian character, and knew that a small band of resolute Europeans, possessed of fire-arms, could sweep every thing before them.

He could not endure the quiet life on his estate, and so he obtained from the governor permission to explore the coast of the South Sea to the eastward. He spent a large part of his fortune on a good ship and the necessary supplies for the voyage, and finally set sail from Panama in November of 1524.
It needed a man of no common spirits to withstand the

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disappointments of the next few years. In less than a year this ship returned to Panama for reinforcements. Pizarro himself and a few of his men remained at a place not very far from Panama. Here he was joined by reinforcements under Almagro. Undismayed by his first experience, he again sailed southward along the coast. Xeres's brief account is as follows: "When they thought they saw signs of habitations, they went on shore in their canoes they had with them, rowed by sixty men, and so they sought for provisions. They continued to sail in this way for three years, suffering great hardships from hunger and cold. The greater part of the crew died of hunger, insomuch that there were not fifty surviving. During all these years they discovered no good land; all was swamp and inundated land without inhabitants."

This expedition accomplished nothing further than to obtain definite information as to Peru. Pizarro's grant from the governor having expired, and the further fact that he had spent all his fortune in these unsuccessful expeditions, made it necessary for him to go to Spain. Received by the emperor with favor, clothed with ample authority, he was able to raise men and money, and finally sailed from Panama in 1531 on his third and successful expedition for the conquest of Peru. Thus was

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made known to the world what is regarded as the most wonderful example of native civilization in the two Americas.

The dawn of history for Peru was the sunset of her native culture. In a few short years what has come down to us as the Empire of the Incas was completely overthrown; the enslaved Indians were groaning under the weight of Spanish oppression; the demolition of her ancient monuments had already begun, and romance, tradition, and wonder had already thrown their subtle charms around the ruins. The old customs and usages were on the sudden dropped, a new culture was forced upon the unwilling natives, and prehistoric Peru, though distant but a few years in time, was as completely separated from historic Peru as is the culture of the Neolithic Age in Europe from that of the early historic period.

The magician's wand in the fairy stories of olden days did not present results more bewildering in their changes than did the operations of the Spaniards in Peru. All accounts unite in praising the government of ancient Peru. There is probably no question but what the government the Spaniards overthrew was one far better adapted to the wants of the native inhabitants than the one they forced them to accept. But when we read the

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accounts of that government as set forth by the early writers, we are at a loss to know what to believe. There is such an evident mixture of fables, traditions, and facts, that the cautious student hesitates, and asks what support the researches of later scholars give to these early writers. We doubt whether we have to this day clear ideas of the culture of ancient Peru. This is to be regretted. There is no question but that here was the highest development of the Indian race in America. If we accept the accounts given us, here rose an empire which will not suffer by comparison with the flourishing empires of early times in Oriental lands. Let us try and learn what we can of this culture, and see wherein it differed from that of the civilized tribes already discussed.

Illustration of Map of Peru.----------

We must, first of all, acquaint ourselves with the physical features of the country. We can never fairly judge of the civilization or culture of a people until we know their surroundings. One of the discoveries of late years is, that the culture of a people is greatly influenced by their surroundings.

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The very appearance of a country whether it is mountainous or plain, sea-girt or inland, influences the character of a people. Civilization is found to depend upon such common factors as climate, food, and physical surroundings. Now if we will examine the map of South America, we will see that the entire section of country occupied by the tribes under consideration is very mountainous. What is known as the Andes is in reality the most eastern of the two ranges. The western one nearer the coast is called the Cordillera, or the Coast Range. The summit of this mountain range often spreads out into great undulating plains, the general elevation of which is from fourteen to eighteen thousand feet above the sea. This series of elevated plains forms a dreary, uninhabited stretch of country, "frigid, barren, and desolate, where life is only represented by the hardy vicuna and the condor."

This is the uninhabited portion of Peru. The general width of this plateau region is about one hundred and fifty miles. Passing this dreary stretch of country we come to another still elevated plateau section, which extends to the snow-clad Andes proper. The distance between these two great mountain ranges is from one to two hundred miles, but as we see on the map they come together in places. One such place, the Pass of La Raya,

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fifteen degrees south latitude is of importance as marking the northern extremity of the great basin of Lake Titicaca. This basin is remarkable in many respects. It is of no inconsiderable size, being six hundred miles in length by one hundred and fifty in width. It has a lake and river system of its own. At the northern extremity of the basin is the noted Lake Titicaca, which is given by some as the traditional place of origin of the Incas. This lake finds an outlet in the River Desaguadero, which flows in a broad and swift stream in a southerly direction, where it empties into Lake Aullagas.

Of this lake we know next to nothing, but it seems to be established that it has no outlet to the sea. Thus this Titicaca basin is but another example of interior basins like that of our own great Salt Lake. It is not, however, favorably situated for agricultural purposes. It is a "region where barley will not ripen except under very favorable circumstances and where maize in its most diminutive size has its most precarious development; where the potato, shrunk to its smallest proportions, is bitter; where the only grain is the quinoa, and where the only indigenous animals fit for food are the biscacha, the llama and the vicuna."

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Thus we see that a large part of the interior of Peru was not desirable for habitations. But this great plateau region north of the basin of Lake Titicaca is here and there broken up by what we would call valleys, but which the Spaniards more appropriately named *bolsons*, literally meaning "pockets." These bolsons are of various altitudes, and, therefore have different climates and productions. Some are well drained and fertile, others are marshy and contain considerable lakes. As a general thing, the bolsons are separated from each other by stretches of the dreary, desolate plateau; or by ranges of precipitous hills and mountains, or by profound gorges, along which courses some river on its way to swell the flood of the mighty Amazon.

The coast range of mountains of which we have spoken runs nearly parallel to the coast, distant from it about forty miles. This stretch of country along the entire coast of ancient Peru is mainly a desert. Owing to causes which we need not explain, rain is almost unknown; the consequence is, the coast presents a dreary, verdureless, forbidding appearance. The melting snows on the great Cordillera, however, send down, here and there, on their western flanks, feeble rivers. Some of these rivers reach the sea, others prolong their flow but a few miles from the

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mountains before the thirsty desert swallows them from view. As is true of all desert countries, all that is needed to render it fertile is water; so, wherever these rivers occur there are found wonderfully fertile valleys. Every one of these valleys was once thickly settled, but, like the bolsons of the interior, they were not connected with each other. Each valley is separated from its neighbor by many miles of almost trackless desert, across which the Incas are said to have indicated the road by means of stakes driven into the sand and joined by Ozier ropes. No remains of such roads have been found by modern travelers.

Illustration of Fortress, Huatica Valley.-------

From this description it is "clear that but a small portion of the country was inhabitable, or capable of supporting a considerable number of people. The rich and productive valleys and bolsons are hardly move than specks on the map." It is necessary that we bear this description of the country in mind. It will help us to understand as nothing else will how the tribes located in one rich and productive bolson could, by

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successive forays, reduce to a condition of tribute tribes living in other detached valleys and bolsons. It will also enable us to put a correct estimate on the extravagant accounts that have reached us of the population of this country under the rule of its ancient inhabitants. We can also readily see why the tribes living in the hot and fertile valleys along the coast, which were called Yuncas by the Peruvians, should differ in religion and mental and moral characteristics from the tribes living in the bolsons of the interior, where the snow-clad peaks were nearly always in sight, and where the sun, shedding his warm and vivifying beams, would appear to the shivering natives as the beneficent deity from whence comes all good.

We must now turn our attention to the tribes inhabiting the section of country just described. We have seen that the Mayas, of Central America, the Nahuas, of Mexico, and the sedentary tribes, of the United States, were considerably in advance of the great body of the Indian tribes of North America. We find the same fact true of the natives of South America. Those tribes inhabiting the territory of ancient Peru, and those of the territory now known as the United States of Columbia, were considerably further advanced than the wild tribes living in the remaining portions of South America. Quite a number of our

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scholars have grouped in one class these partially civilized tribes of both North and South America, and called them the Toltecan Family. But others do not think that there are sufficient grounds for such a class division. They can not detect any radical changes in the domestic institutions of the various tribes. On this point we must wait until our authorities are agreed among themselves.

Attempts have been made to classify the various partially civilized tribes of Peru. There are several difficulties in the way. It was, for instance, the custom of the Incas, whenever they had reduced a tribe to tribute, to force them to learn their language, which was the Quichua, and is what the early Spanish writers call the general language of Peru. How far this language was forced on the tribes, and how far it was their own idiom, we can not tell. Mr. Markham, who has made a very careful study of all the authorities bearing on Peru, divides the territory of ancient Peru into five divisions, and in each locates a number of tribes, which he thinks forms a family.

The first, and most northern one, extends north from near Tumbez, in the present State of Ecuador. The second extends from Loja, on the north, to Cerro De Pasco, in about eleven degrees

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south latitude. The third, and most important, extends from this last named place to the pass of La Raya, fifteen degrees south latitude. This was the home of the Incas and five other closely related tribes. To the south of La Raya is the basin of Lake Titicaca, the home of a family of Indians generally known as the Aymara Indians. This name is, however, wrong; these tribes should be called the Collao Indians. These four divisions do not include any territory west of the Cordillera range, except one part of the third division. These four families are all closely related. Mr. Markham thinks they all had a common origin. Mr. Squier thinks the Collao, or, as they are generally called, the Aymara Indians, are distinct from the others. "They differ from each other as widely as the German's differ from the French," is his own conclusion. The entire coast district of Peru was the home of many tribes of Indians, about which we as yet know but little. The name by which they are known is Yuncas.

We are now ready to proceed to a consideration of the culture of ancient Peru, and a description of the monuments. But before doing so we must have a word to say as to the authorities. At the time of the Spanish conquest of Peru, the Empire of the Incas was supposed to have been in existence about four hundred

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years. But the Incas had no hieroglyphic or pictorial system of recording events. The most they had was a system of knot records or quippos, which will be explained in due time. These records were simply aids to the memory. Mr. Squier places them "about on a par with Robinson Crusoe's Notched Calendar, or the chalked tally of an illiterate tapster." They are manifestly of no value as historical records.

It must be evident, then, that all our knowledge of Peru, previous to the arrival of the Spaniards, rests solely upon traditions. We have no reason to suppose that these traditions are of more value in their case than in the case of other rude and illiterate people. The memory of such people is very short lived. The tribes in the southern part of the United States must have been greatly impressed with Do Soto's expedition. They heard fire-arms for the first time, and for the first time saw horses ridden by men. Yet in the course of a few generations they had completely forgotten all this.

One very eminent authority is Garcillasso De La Vega. Let us examine his writings a minute. He was born in Cuzco about 1540, but a few years after the conquest. His mother claimed descent from the royal family. He left Peru in 1560, when he was just

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twenty years old, and went to Spain. He first sought advancement in the army. Despairing of success in that line, he turned his attention to literature. One of his first works was an account of De Soto's expedition to Florida. The historian Bancroft thus characterizes this work: "An extravagant romance, yet founded upon facts--a history not without its value, but which must be consulted with extreme caution." Yet in this work there were no subtile ties of blood, no natural bias as there would be in favor of the land of his birth.

About 1600 he commenced his "Royal Commentaries of Peru." This is the main source of information as to ancient Peru. We must reflect that he had been away from his native land forty years when he commenced the work. His sources of information were the stories told him in his boyhood days, the writings of the Spanish travelers, monks, and conquerors, and what he learned by corresponding with his old friends in Peru, which he did when he formed the design of writing his history. In other words, his history rests on the traditions extant at the time of the conquest, viewed, however, from a distance of sixty years. Who can doubt but what the old man, writing his accounts of this mother's race, that race that had been so deeply wronged, wrote it under the influence of that potent spell, which the memory of

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old age throws around childhood's days?

It is evident we have in these accounts but little deserving the name of history. When he undertakes to tell us of the doings of the Incas, who are supposed to have reigned three or four hundred years before the Spanish conquest, descending to such details as what nations they subdued, the size of their armies, their speeches to their soldiers, the words of counsel they addressed to their heirs, their wise laws and maxims--and we know that this account rests on traditions--he who believes that they are of historical value, is surely possessed of a good store of credulity. We do not mean to say that his writings are of no account. On the other hand, they are of value.
The historical part we are to consider simply as traditions, and we are to weigh them just as we would any other collection of traditions and compare them with monuments still extant. He is good authority on the customs and manners of the Peruvians just previous to the arrival of the Europeans.

We have seen what strange mistakes the Spanish writers made in describing the government and customs of the Mexicans. We have no doubt but what substantially the same mistake has been made in regard to Peru. We believe that a careful, critical study of

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all that has been written on the subject of Peru by the early writers will establish this fact. As yet this has not been done. We must therefore be careful in our description of the state of society amongst them, as we do not wish to make statements not supported by good authority.

We must try and decide as to what is the most probable origin of the ancient Peruvian civilization. Some of the earlier writers on this subject would trace it to an influx of Toltecs, the same mythical race that is credited with being the originators of the culture found in Mexico and Central America. But our modern scholars have clearly shown that the Toltec Empire, which was supposed to have preceded the Mexican, never existed. What we are to understand by the Toltecs is the sedentary tribes of Indians, either of the Nahua or Maya stock. The only value we would assign to the story of their dispersion is that it is a traditional statement that the migration of the sedentary Indians has been in a direction from north to south.

Illustration of Ruins at Pachacamac.----------

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We have no means of knowing when the first tribes arrived in the country, or of their state of culture. It was doubtless at a very early date, and the tribes were probably not far advanced. We have no reason to suppose the culture of Peru was influenced from outside sources at all. We can not detect any evidence of a succession of races in Peru. The distinguished author to whom we have already referred speaks of what he calls the ancient Peruvians as distinguished from the modern tribes that acknowledged the government of the Incas. We think that all the evidence points to a long continued residence of the same race of people.

We may suppose that in the fertile valleys of the coast, and in the bolsons of the interior, tribes of rude people were slowly moving along the line of progress that conducts at last to civilization. There is no reason to suppose that this progress was a rapid one. Under all circumstances this development is slow. We must not forget the natural features of the country. The inhabited tracts were isolated, hence would arise numerous petty tribes, having no common aims or mutual interests. Each would pursue their own way, and would keep about equal pace through the stages of Barbarism.

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In process of time geographical and climatic causes would produce those effects, from which there is no escape, and some tribes would distinguish themselves as being possessed of superior energy, and the same results would follow there as elsewhere; that is, the dominion of the strong over the weak. All other circumstances being equal, we would look for this result in a section where a mild climate and fertile soil enabled man to put forth his energies, and rewarded his labors. All accounts agree in speaking of the bolson of Cuzco as well provided by nature in this respect. One eminent traveler speaks of it as "a region blessed with almost every variety of climate. On its bracing uplands were flocks of llamas and abundance of edible roots, while its sunny valleys yielded large crops of corn, pepper, and fruits. Mr. Squier thinks that, on the whole, the climate is very nearly the same as that of the south of France.

This bolson was the home of the Incas. A number of writers speak of the Incas very much as if they were a royal family. It is not necessary to discuss this point very extensively at present. All our accounts of their early history are traditional. Mr. Markham and Mr. Squier, both competent judges, assert that the weight of traditions is to the effect that the Incas

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originated near Cuzco. "Universal traditions," says Mr. Markham, "points to a place called Peccari Tampu as the cradle or point of origin of the Incas." As near as we can make out from the description, this was where, as seen from Cuzco, the sun appeared to rise.

We must remark that the sun was the ancestral deity of the Incas. All the Andean people worshiped some object as an ancestral deity. "An Indian," says La Vega, "is not looked upon as honorable unless he is descended from a fountain, river, or lake, or even the sea, or from a wild animal, such as a bear, lion, tiger, eagle, or the bird they called a condor, or from a mountain, cave, or forest." The Incas claimed descent from the sun. So we can see why their legends would center on the place where the sun appeared to rise. In after years, when they had extended their conquests to the Collao, and stood on the shore of Lake Titicaca, the sun appeared to them to rise out of its waves; and so this lake became to them a second point of traditional origin.

We see we can not solve the question of the origin of the Incas until we solve the deeper problems of the origin of the Andean tribes. Every thing seems to indicate a long-continued

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residence, perhaps for centuries, and a slow advance in culture. We are not to suppose the Incas were endowed with unusual capacity for improvement; all the tribes were probably about equal in this respect. But their situation was in their favor, and they did not have to contend with those obstacles that confronted other tribes. They must have increased in numbers and in culture; they would in time feel themselves strong enough for conquest. We must bear in mind the peculiar geographical features of the country. In the isolated valleys and bolsons were living other tribes, but little inferior to the Incas. There were no common interests between these tribes. One by one they fell before the assaults of the Incas, and were reduced to tribute. Rendered still more powerful by success, the Incas pushed on their conquests until finally all the tribes living in that vast stretch of country from the Andes to the Pacific, from Chili to the United States of Colombia, acknowledged themselves tributary to the Incas. This was the state of things when the Spaniards, under Pizarro, appeared on the scene.

When we undertake to learn the history or the state of culture among the Incas, we are entering on a difficult subject. Of their history, we know but very little more than is given in

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this outline; and owing to the complete absence of all records, we can not expect to know very much. Garcillasso draws such an inviting picture of the happy government of the Incas, that we would suppose that no rebellion or insurrection would ever occur. It seems, however, that their government was as much subject to such trials as any. Mr. Forbes tells us that "the Aymaras never submitted tamely to their Peruvian masters, but from time to time gave them much trouble by attempting to recover their independence." And M. Reville tells us of the Incas that, "more than once they had to suppress terrible insurrections." And we shall see, further on, that the probabilities are that the various tribes composing this so-called empire were not more compact and united than were the tribes composing the Mexican Empire.

Shortly before the conquest, the Incas had reached their zenith of power. Huayna Capac, who died about 1525, was in reality the last of the Inca chiefs. Under his management the tribes as far north as Quito were reduced to tribute. The story goes that shortly before his death he divided the empire between two of his sons. One, Huascar, the rightful heir to the throne; the other, Atahualpa, half-brother to Huascar. His mother was daughter of the last king (?) of Quito. Her father had been

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forced to submit to the victorious Huayna Capac. This division of the Incarial Empire, was not at all to the liking of either Huascar or Atahualpa. They both wished to be sole Inca. Civil war was the result. Atahualpa, by treachery, had taken his brother prisoner, and would doubtless have achieved his ambition, but just then Pizarro invaded the country, and the reign of the Incas was over.

Thus far, the story. We very much doubt whether this expresses the facts of the case. There is no question, of course, that civil war was in progress when the Spaniards arrived, which war, by the way, was a very fortunate thing for the Spaniards; but we do not know enough about the government of the Incas to know whether Huayna Capac could bequeath any powers to his sons. About all we are justified in saying is, that on his death, two persons (they were very likely brothers, and sons of Huayna Capac) aspired to the chieftaincy of the Incas, and, failing to agree, resorted to war to settle the matter.

The question is, how far back in the unrecorded past can we follow tradition? Huayna Capac is thought to have been chief for about fifty years. His predecessor is said to have been one Tupac Yupanqui. Velasco, an early writer on the Peruvians,

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thinks he was chief for about thirty-six years. As this would carry us back nearly one hundred years, it must be evident we have gone about as far as we can place any reliance on tradition. However, the third chief, going backwards, was also called Yupanqui, sometimes denominated "Yupanqui the Great," and his reign (?) takes us back to about the year 1400. "Beyond this point," says M. Castaing, "we fall into a mythological era." We fully agree with him. We can not think there is any special value in accounts of events said to happen before that time--that is, for historical purposes.

That there were victorious chiefs, conducting victorious forays before that date, is, of course, admitted. That the names of many of the chiefs have come down to us, as well as some of their notable achievements is quite possible. It is also evident that some mythological personages would appear in tradition as "reigning Incas." It is equally plain that neither Garcillasso, nor any of the Spanish writers, had any clear ideas of these ancient times or events. All traditions finally settle on Manco Capac as the first chief of the Incas. M. Castaing says he "is but an allegory of the period of formation." The date of the accession of this mythological chief is given by most authorities as about the year 1000. M. Castaing thinks it was in

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the middle of the twelfth century. It does not make much difference which date the reader concludes to accept--one will do as well as the other.

Let us turn our attention to the culture of the Incas, and their state of government. Here we would expect to be on firm ground. We would expect the Spanish writers to give us reliable accounts of the state of society of the people they conquered. But, as Mr. Squier remarks, the overthrow of the Peruvian government "was so sudden and complete that the chroniclers had hardly time to set down the events which took place before their own eyes, and had little leisure, or perhaps inclination, to make a careful investigation into the principles of their civil and religious polity. As a consequence, this work has devolved upon the laborious student and archaeologist of a later time." In other words, we are to compare the accounts given us by the early writers with our present knowledge of Indian society.

We have already made the statement that the Inca were a tribe of Indians. But, if they were a tribe, did they have the usual subdivisions of a tribe--which, we remember, are the phratry and gens? The Spanish writers say nothing about such divisions. This is not strange. They said nothing about the phratries and

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gentes of the Mexicans; and yet they were in existence. Neither did the English mention the institution of the phratries and gentes among the Iroquois; and yet they were fully developed. We answer, that the Inca tribe were divided into both phratries and gentes. It is necessary to show what grounds we have for such belief. It is well to have a little better understanding of the surroundings of this tribe.

The isolated section of country which they occupied is about seventy miles long by sixty in width. "The proper name for the aboriginal people of this tract," says Mr. Markham, "is Incas." This word must have been at first the title for chief--for all the chiefs in this section were called Incas; but, in process of time, the name was assumed as the special title of the tribe at Cuzco. Mr. Markham gives us further the names of seventeen lineages who occupied this valley. Whether a lineage was a tribe or not we can not decide. We will now confine our attention to the ruling tribe at Cuzco.

The Spaniards noticed that Cuzco was divided into two parts, called respectively Upper and Lower Cuzco. Garcillasso tells us that this division was made as follows. Manco-Capac with his wife and queen were children of the Sun, sent to civilize the

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Indians, who, before their arrival, were a very degraded sort of savages. From Cuzco this sun-descended couple went their different ways--the king to the north, the queen to the south--"speaking to all the people they met in the wilderness, and telling them how their father, the Sun, had sent them from heaven to be the rulers and benefactors of the inhabitants of all that land; ... and, in pursuance of these commands, they had come to bring them out of the forests and deserts to live in villages." This sounded so good to the wild tribes, that they "assembled in great numbers, both men and women," and set out to follow their exhorters.

The tribe that followed the king settled Upper Cuzco; while the queen's converts settled Lower Cuzco. This division was not made so that those living in one half should have any special privileges over the other--for they were all to be equal, like brothers. The division was solely in order "that they might be a perpetual memory of the fact that the inhabitants of one were assembled by the king, and the other by the queen." The only difference between them was, "that the people of Upper Cuzco should be looked upon and represented as elder brothers, and those of Lower Cuzco as younger brothers."

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Such is the account of the settlement of Upper and Lower Cuzco. Any one acquainted with the general principles on which the division of Indian tribes into phratries took place, can not help concluding that these divisions were simply two phratries. The inhabitants of each traced their descent back to a supernatural personage. They were equal in power to each other as elder and younger brothers. Polo Ondegardo simply remarks that "the lineage of the Incas was divided into two branches, the one called Upper Cuzco, the other Lower Cuzco." There ought to be no objection to substituting for the word branches used above the scientific term our scholars now employ; that is, phratry. Each tribe of the Iroquois confederacy was divided into two phratries, and their name for this division was a word which meant brotherhood.

Whatever doubt we may have on this point vanished when we come to examine into the customs of the Incas. We must not forget that the most prominent way a phratry shows itself is in matters of religion, and in the play of social games. "The phratry, among the Iroquois," says Mr. Morgan, "was partly for social and partly for religious objects. ... In the ball game, for example, they play by phratries, one against the other. Each phratry puts forward its best players, usually from six to ten on a side, and

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the members of each phratry assemble together, but on opposite sides of the field in which the game is played. The members of each phratry watch the game with eagerness, and cheer their respective players at every successful turn of the game."

Illustration of Relics from Guano Deposits.---------

Let us see how it was among the Incas. Like all Indian tribes, the Incas were very fond of ceremonious feasts. Nearly every month they celebrated one or more. We gather from Molina that on occasions when the whole tribe participated in such religious observances, the people of Upper Cuzco sat apart front Lower Cuzco. In the month corresponding to August they had a celebrated feast, the object of which was to drive out all evil from the land. We read: "All the people of Cuzco came out, ... richly dressed, sat down on benches, each man according to the rank he held, those of the Upper Cuzco being on one side, and those of Lower Cuzco on the other." And of another feast we read: "They brought out the embalmed (?) bodies of the dead Incas, placing those who had belonged to Upper Cuzco on the side where that lineage was stationed, and the same with those of

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Lower Cuzco." Other examples could be given, but this point is well established. In games this same division was observed, since we read that in the month of December, "on the first day of the month, those who had been armed as knights--as well those of the lineage of Upper Cuzco as those of Lower Cuzco--came out into the square with slings in their hands, ... and the youths of Upper Cuzco hurled against those of Lower Cuzco." We may therefore consider it well established that the Incas were a tribe of Indians having two phratries.

Let us now see how the matter stands in regard to gens. This division follows almost as a matter of course, but it is well to see what separate grounds exist for the assertion. Garcillasso, in his description of Cuzco, after a reference to the division into Upper and Lower Cuzco, tells us further that it was divided into twelve wards. Mr. Squier gives us a map of the ancient city. From this we see that the twelve wards were arranged in an irregular oval around the principal square. Seven of them belonged to the division of Upper Cuzco, the other five to Lower Cuzco.

This division is utterly unintelligible to us, unless we suppose them to be subdivisions of the phratries. It makes no difference

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what name we bestow upon them, in effect they can be nothing else than gentes. As to the number of them, it is well to notice a coincidence in the statement of an Indian writer, Salcamayhua. On a certain very important occasion there were assembled "*all* the councilors. The governor entered the chamber, where *twelve* grave councilors were assembled." The most reasonable explanation that can be given for the number twelve is that each gens had one representative in the council. The Incas are thus seen to be very probably, at least, no exception to the general rule of Indian tribes.

From our present standpoint what can we learn as to their government? It is, of course, well known what the position of the early writers on this subject is. They all agree that the government of the Incas was a monarchy of the strictest type. We have seen what a wonderful empire they bestowed on the Mexicans. The Peruvian Empire is painted in still brighter colors. Modern writers have not allowed the early accounts to suffer by repetition. Rivero uses the following language: "The monarchs of Peru, ... uniting the legislative and executive power, the supreme command in war, absolute sovereignty in peace, and a venerated high-priesthood in religious feasts, ...

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exercised the highest power ever known to man." Even so cautious a writer as Mr. Squier speaks of the Incas as ruling "the most thoroughly organized, most wisely administered, and most extensive empire of aboriginal America."

It is freely admitted that there is much that is indeed wonderful in the culture of the Incas; but it has, undoubtedly been greatly exaggerated. To deal with this question as it should be would require an entire volume of itself, and would require far more extensive research than the writer has been able to make, or is, indeed, prepared to make. It will do no harm to see what we can learn by comparing the statements of some of the early writers with what we have now learned of Indian society.

Let us first inquire as to the council. There is no question as to the existence of a council. Garcillasso and all the early writers refer to it in an accidental sort of way. To show the force of this statement, we will give a few quotations. Garcillasso, speaking of the movements of the Inca Viracocha, says: "Having passed some years in making journeys, he returned to Cuzco, where, with the advice of his councilors, he resolved on war." And, in another place: "Having consulted with his

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council" he assembled his army. Talking about the son of the foregoing, he says: "In fine, this king, with the advice of his council, made many laws, rules, ordinances," etc. In the foregoing we are made aware of the existence of a council, but are not told as to its size or powers. Each gens would of course be represented in the council. We have spoken in one place of the number twelve. Mr. Bandelier tells us that the council consisted of sixteen members. As to its power we are also left in the dark; but, judging from what we have learned of the council among the Mexicans and Indian tribes of the North, who can doubt but that it was the supreme governing body?

The more we study this question, the more points of resemblance we would find with the social organization of the Mexicans. The tenure of land was of course the same, as we learn from the report of Ondegardo--some differences may have occurred in regard to tribute.

The Mexicans, we must remember, were at the head of a confederacy, and the tribute was brought to Mexico to be divided among the three tribes. The Incas were the only tribe, in the case of Peru, having supreme power. Having no one to suit but themselves, they introduced some new features. The tribute,

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instead of being all brought to Cuzco, seems to have been, at least a portion of it, stowed away in storehouses located at places most convenient for the Incas. Cieza De Leon says: "The Incas ... formed many depots full of all things necessary for their troops. In some of these depots there were lances; in others, darts; and in others, sandals: and so, one with another, arms and articles of clothing which these people used, besides stores of food. Thus, when a chief was lodged in one of these depots with his troops, there was nothing, from the most trifling to the most important article, with which they were not supplied." This tribute was gathered by regular tribute-gatherers. As in the case of Mexico, these appear in history as governors. Ondegardo says they left "Cuzco every year, and returned in February, ... bringing with them the tribute of the whole empire."

As a rule, the Incas did not interfere with the customs of the tribes they had conquered. Garcillasso says: "Excepting a few alterations that were necessary for the welfare of the whole empire, all the other laws and customs of the conquered province were retained without any change." In the main, all they wished for was tribute. Yet they seem to have had some idea of a higher policy than that. They are credited with carrying out measures

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which would certainly tend to bring the tribes into a close union. Mr. Squier remarks: "The efforts of the Incas to assimilate the families that were brought within their empire, by force or alliance--in respect to language, religion, and modes of life--were powerful and well-directed." This was a step ahead of any thing that can be said of the Mexicans.

In the matter of language, it is said they made persistent efforts to have the conquered tribes learn their own language. De Leon tells us that it was a law throughout the kingdom that this language should be used--"fathers were punished if they neglected to teach it to their children in their childhood." How much we are to believe of this account is doubtful. Mr. Markham has shown us that the languages of all the interior tribes were related. We know how difficult it is to compel a conquered people by law to learn a foreign language. William the Conqueror made an unsuccessful attempt to compel the Anglo-saxons to learn French--it ended by his followers learning English. Are we to believe that a tribe of Peruvian Indians were successful in spreading their language over a wide extent of territory in the course of a few generations?

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Illustration of Burial Towers.----------

What is considered as the great stroke of policy on the part of the Incas, was their system of colonies. On this point De Leon tells us: "As soon as a province was conquered, ten or twelve thousand men were ordered to go there with their wives; but they were always sent to a country where the climate resembled that from whence they came. If they were natives of a cold province, they were sent to a cold one; and if they came from a warm province, they went to a warm one. These people were called mitimaes--which means Indians who have come from one country and gone to another." On this we might remark, that the Incas did not always show such discriminating care where they sent the exiles, since Mr. Markham tells us that the "descendants of colonists on the coasts of Peru (a warm climate, notice) still retain traditions concerning the villages in the Andes (a cold province), whence their ancestors were transported."

We will only refer to the so-called royal roads of Peru. Humboldt observed them in Northern Peru, and speaks in high praise of them. Many of the early writers mention them. De Leon gives us a really wonderful account. Modern travelers have not

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been so fortunate in finding their remains. Mr. Squier does not mention them. Mr. Hutchinson searched at every place along the coast, and could find no trace of such works. The northern part of Peru, where Humboldt saw them, was almost the last section to be conquered by the Incas. It is singular that they should have been in such a hurry to build roads in that section, when the other parts of their territory were destitute of them.

We are now prepared to inquire as to what remains of this ancient people have come down to us; and in studying these ruins we must keep constantly in mind the social organization of Indian tribes. We notice on the map, at about 8° south latitude, a place marked Truxillo. It is situated nearly two miles from the sea, in the valley of the Chimu. Its port is the town of Huanchaco, a dilapidated village of a few hundred houses, about ten miles further north. Truxillo was founded in 1535 by Francisco Pizarro, and was once a place of considerable importance, but at present it is probably most noted for the famous ruins located near it. Several of the fertile coast valleys that we have previously described, here unite; consequently this was a place of great importance to the coast tribes. The ruins here are among the most remarkable in Peru. The road from Huanchaco to Truxillo passes directly through the

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field of ruins.

Illustration of Palace.----------

Mr. Squier tells us that the ruins "consist of a wilderness of walls, forming great inclosures, each containing a labyrinth of ruined dwellings and other edifices." As our space is limited, we will describe but one of these inclosed spaces. This is a view of what is usually called a palace, but this certainly is an absurd name. The inclosure contains some thirty-two acres; the walls surrounding it are double, and sufficiently heavy to resist field artillery. At the base the walls, in some cases, are fifteen feet thick, gradually diminishing toward the top, where they are not more than three feet thick. They vary in height, the highest ranging from thirty to forty feet high.
In order to give a clear idea of these walls, we introduce this cut, which gives us a section of the walls. The materials of which they are built is adobe.

Illustration of Section of Palace Wall.----------

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Within this inclosure we notice three open places, or courts, a number of smaller cross-walls dividing the remaining space into a number of small courts. Around each of these courts, generally on three sides, are the ruins of houses. All in the interior of the large inclosures is so far gone in ruins that we can with difficulty make out the plan. Inclosures, such as we have described here, are the principal features of the Chimu ruins. Mr. Squier speaks of one three or four times the size of this one. With our present knowledge we are justified in concluding that Chimu was the head-quarters of a powerful tribe. We are surely justified in assuming further that each of these great inclosed squares, containing upwards of thirty, forty, and even fifty acres, was the home of a gens--their fortified place.

Of the houses, Mr. Squier says: "Around each court the dwellings of the ancient inhabitants are grouped with the utmost regularity. ... Some are small, as if for watchmen or people on guard; others are relatively spacious, reaching the dimensions of twenty-five by fifteen feet inside the walls. These walls are usually about three feet thick, and about twelve feet high. The roofs were not flat, but, as shown by the gables of the

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various buildings, sharply pitched, so that, although rain may not have been frequent, it was, nevertheless, necessary to provide for its occurrence. Each apartment was completely separated from the next by partitions reaching to the very peak of the general roof. There are no traces of windows, and light and air were admitted into the apartment only by the door."

On one side, at least, the whole area of the city was protected by a heavy wall, several miles of which were still standing at the time of Mr. Squier's visit. At various places along this wall, cross-walls extended inward, thus inclosing great areas which have never been built over, and which show all evidence of ancient cultivation. We notice, near the upper end of this inclosure, a court, occupied by a mound. This is known as a *huaca,* which calls for some explanation. It seems that the general name among all the Peruvian people, for a sacred object, is huaca. Being a very superstitious people, this name is applied to a great variety of purposes, amongst others, to these great artificial mounds, the majority of which are probably burial mounds. The construction of many of these mounds is very singular. It seems as if they were a large collection of rooms, each one of which was filled with clay or adobe. In some of these chambers, probably, treasures are concealed. One very

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celebrated huaca, at Chimu, was found to contain an enormous amount of gold vessels.

We must not forget to notice the arts of the Chimu people. The walls of the inner edifices were often ornamented as is seen in the following cut, of which the upper one is stucco-work and the lower one is in relief. Adobe bricks are allowed to project out, forming the ornamental design. Other ornaments of stucco-work were observed. The second figure on this page gives us an idea of this style of ornaments. As an evidence of how the climate of Peru preserves ruins, we would mention that, though this last stucco-work has been exposed to the elements for probably several centuries, yet it is still apparently perfect.

Illustration of Ornamentation of Walls.----------

Illustration of Adobe Ornament.----------

The Chimu people were certainly very expert workmen in gold and silver. De Leon asserts that, when the Incas conquered them, they took to Cuzco many of the artisans of the country, "because they were very expert in the working of metals, and the

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fashioning of jewels and vases in gold and silver." In the cut following we have two vases--the smaller one of gold, the larger of silver." The material is very thin, and the ornaments are produced by hammering from the inside.

Illustration of Gold and Silver Vases.----------

Illustration of Bronze Knives and Tweezers.----------

Besides such works as just described they had the art of casting representations of men, animals, and reptiles in silver--sometimes hollow, sometimes solid. They even cast more complex objects. Mr. Squier says he has one "representing three figures--one of a man, and two women, in a forest. It rises from a circular base about six inches in diameter, and weighs forty-eight and a half ounces. It is solid throughout--or, rather, is cast in a single piece, and rings, when struck, like a bell." The trees, he says, are well represented, their branches spreading in every direction. The human figures are also well proportioned, and full of action. They also knew how to manufacture bronze. Many agricultural implements are found, not only at Chimu, but all along the coast. In the preceding cut

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we have bronze knives and tweezers--also, a war-club of the same material.

All the coast tribes of Peru excelled in the manufacture of pottery. Mr. Squier tells us that, in this sort of work we find "almost every combination of regular or geometrical figures"--men, birds, animals, fishes, etc., are reproduced in earthenware. In this cut we have one of the many forms. Notice the serpent emblem.

Illustration of Water-jar.----------

Illustration of Water-jars from Ancon,----------

The people of Chimu, whose ruins we have been describing, belong to the coast division--differing in many respects from the Peruvian tribes in the interior. Our information in regard to the coast people is very limited. We have to judge them almost entirely from the ruins of their towns, and the remains of their handiwork. There is no reason to suppose they were the inferiors of the Peruvians in culture. It is quite the custom to speak of them as if they were low savages before the Incas conquered the

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country; and that they owe to the latter all their advance in culture. On the contrary, we may well doubt whether their condition was at all improved by the Inca conquest. The coast people are supposed to have been conquered about one hundred years before the Spanish conquest. It was only after a most stubborn resistance that the principal valleys were subdued.

Illustration of Cloth found in Grave.----------

It is not necessary, neither have we space, to give a review of all the ruins along the coast. They are very plentiful. There is not an inhabitable valley but that they abound there. The soil where not irrigated is very dry, and tends to preserve any thing buried therein. All the coast people buried their dead; hence it is that we find, in nearly all the coast valleys, such extensive cemeteries. At Ancon, for instance, twenty miles north of Lima it is simply wonderful how extensive the cemeteries are. Mr. Hutchinson says they extend for miles. Very extensive explorations have been made here for scientific purposes. We have given, earlier, some water-jars excavated at Ancon, in last illustration we have some specimens of cloth found in

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graves farther north; and in the same locality was found a very wonderful piece of feather-work. The small feathers were so fastened to a ground of cotton cloth that they could not be pulled off.

Illustration of Wall in Huatica Valley.----------

Another noted place, about the same distance south of Lima, is Pachacamac. Mr. Squier concludes, from the cemeteries at this place, that it was a holy place, to which pilgrims resorted from all parts of the empire so as to be laid to rest in holy ground. When we learn of so many other similar localities, we see that this conclusion does not follow. The most we can say is, that these valleys have surely been settled for a long while.

The city of Lima is situated on the south bank of the Rimac River, about six miles from the coast. Its port is the town of Callao. The valley is called the Huatica Valley. Very extensive and wonderful rains occur in this valley, between Lima and the sea. We are told these ruins are thick and close over a space of a few square miles, and are inclosed within a triple wall.

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The last cut is given as a representation of a portion of this wall, though only a small portion here and there is still discernible. Amongst these ruins are a large number of immense mounds.

Illustration of Burial Mound, or Huaca.----------

Some are huacas, or burial mounds; and some are in the nature of fortresses. It is best to explain a little more particularly about the burial mounds of the coast region of Peru. This cut gives us an idea of their appearance. As to their construction Mr. Squier says: "Many if not most of the pyramids, or huacas, were originally solid--built up of successive vertical layers of bricks, or compacted clay, around a central mass or core."

But this is not always the case; since in many huacas we find walls, in some rooms, and, finally, as before remarked, some apparently consist of a large, many-storied building, the rooms of which are all filled with clay. In the mound just mentioned, Mr. Hutchinson found a number of inclosures--though the work was done in a rough, shapeless manner. Mr. Squier gives us a

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description of a many-roomed huaca as follows: "Thanks to the energy of treasure-hunters who have penetrated its sides, we find that it had numerous large painted chambers, was built in successive diminishing stages, ascended by zigzag stair-ways, and was stuccoed over and painted in bright colors. The conquerors filled up these chambers, and recast the edifice with a thick layer of adobe."

This is surely a singular piece of work. The building just described by Mr. Squier must have been much like a pueblo. We wish we had fuller descriptions of it. Mr. Squier is eminent authority, and scholars delight to honor him for his researches. We take the liberty, however, to question some of his conclusions. How does he know that this structure was ever used for any other purpose than as a mound? It is indeed a singular way to construct a mound, but when we learn of the existence of mounds showing the different methods of work--some solid, some with walls, others with rude rooms, still others with rooms towards the top--why not say that this many-storied building was simply one style of mound-building? He claims that the Incas filled up these rooms, and transformed the house into a mound. Mr. Hutchinson claims there is no proof that the Incas did this sort of work.

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As an example of fortress-mounds, also prevalent in the valley of the Huatica, we present the next cut. Mr. Hutchinson describes this mound as being eighty feet high, and about four hundred and fifty feet square. "Some of the adobe walls, a yard and a half in thickness, are still quite perfect. That this was not likely to have been a burial-mound may be presumed from its formation. Great large square rooms show their outlines on the top, but all filled up with earth. Who brought this earth here, and, with what object was the filling up accomplished? for the work of obliterating all space in these rooms with loose earth must have been almost as great as the construction of the building in itself." So it seems that in the fortress-mounds also we meet with this same mysterious feature--rooms filled with earth.

Illustration of Fortress Mound.----------

The Huatica Valley was also the location of a famous temple--at least such are the traditions--and ruins are pointed out as being those of the temple in question. It is simply an immense,

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large inclosed square, of some forty-nine acres. On each side of this square there is a huge mass of ruins, and another in the center. In our next illustration we have a portion of the wall surrounding the ruins on the south side of the supposed temple. This is the largest of the group of ruins. The walls are seventy feet high; the area at the top is over five acres. Here, again, we notice the same mysterious feature already referred to, for "on the top of this were also discernible the outlines of large square rooms, filled up, as all the others, even to the topmost height of seventy feet, with earth or clay."

Illustration of Temple Wall.----------

This cut is given as a fort, meaning thereby a fortress-mound, such as we have already described. It is said to be situated to one side of the temple. From this we understand that the wall seen in the cut is that already mentioned as inclosing the temple. Another ruined fortress found in this valley is given earlier.

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Illustration of Fortress, Huatica Valley.----------

Twenty miles south of Lima, in the valley of the river Lurin, is an important field of ruins, known as Pachacamac, which is still the name of a small village in the neighborhood. We give a general view of the ruins. The principal point of interest, about it is the ruins of an old temple. Traditionally, this, is one of the most interesting points in Peru. All the coast tribes were very superstitious. We have already referred to the celebrated temple near Lima. The temple at Pachacamac was of still greater renown. Arriaga, a famous ecclesiastic, took an active part in extirpating their idolatrous belief. From his accounts, it seems they were much addicted to fortune-telling. Their gods were made to give out oracles and their temples became renowned just in proportion as their priests were shrewd in this matter.

Illustration of Pachacamac.----------

Those at Pachacamac were especially skillful, and it is said,

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pilgrims resorted to it from all parts of the coast. As a consequence, it became very rich. The god that was worshiped here was a fish-god. The name of this god, and the name of this old town are alike lost to us. When the Incas conquered the coast people, they imposed the name of one of their own divinities on this temple, and by that name the place is now known to us.

The ruins of the supposed temple are seen on the hill in the background of the picture. A number of writers speak of this hill in such terms as to imply that it was altogether artificial, like the famous pyramid at Cholula.

Mr. Squier says that it is largely artificial, but that the central core is a natural hill. He speaks of rocks cropping out on the highest part, which seem to be conclusive of the matter. They built up great terraces around this central core. These terrace walls are now in such a ruined condition that they can with difficulty be made out. We introduce this cut as a nearer view of the ruins of the temple.

Illustration of View of the Temple.----------

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Some writers assert that the Incas erected on the summit of this hill a temple of the sun. There are, however, no good proofs of this assertion. According to Mr. Squier the only ruin of the Inca type of architecture is a mile and a half distant.

Mr. Hutchinson noticed, on the very top of the hill, evidence of the same mysterious proceedings to which we have already referred--that is, great rooms all filled up with clay.

He propounds this query: "Whose hands carried up the enormous quantities of earth that fill every space and allow no definition of rooms, halls, or, indeed, of any thing but the clay itself, and the walls cropping up from amongst them?"

We are afraid this query can never be answered. Mr. Hutchinson found graves to be very plentiful all over the field of ruins.

Quite a number of curiosities have been found in these graves. We present in this cut some of the same. We call especial attention to the duck-headed bowl. Compare, this with the cut given in Chapter X, and we will be struck with the similarity.

Another view of the ruins at Pachacamac is given earlier in this chapter. As in the case of the ruins of Grand Chimu, the whole field of ruins was encompassed by a wall, portions of which Mr. Hutchinson observed on the north, stretching away from the sea

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inland. Explorers have found here true arches. They are said to exist in Northern Peru. We are at a loss to account for their appearance, for certainly the people generally were ignorant of their use.

Illustration of Relics from Graves at Pachacamac.-------

The valley of the Canete, the next one we meet going south, is a very large and very fertile valley. It is also full of ruins, but not differing enough from the others to justify a separate description. About one hundred miles below Lima we notice three small islands. These are the Chincha Islands, noticeable on account of the immense quantities of guano they contain. It seems that at various depths in this guano deposits are found relics of man. In our next cut we present some of these objects. The two small vessels which were probably water jars, were found buried in the guano at a depth of sixty-two feet. The other figure, a wooden idol, was found at the depth of thirty-five feet.

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Illustration of Relics found in Guano deposits.------

We have no very good data on which to rely when we attempt to estimate the number of years required to bury the water jars to the depth where found. Thousands of years must have passed. The water jars are not rude forms. No little skill is indicated by their formation. The wooden idol is not necessarily near as old as the jars, but no one can doubt but that it dates from long before the Inca conquest of the valley. Another collection of small idols, and supposed royal emblems, also found in guano deposits, but at an unknown depth, is shown earlier in this chapter.

We have thus far been describing the ruins that occur in the territory occupied by the coast tribes, a people in many ways different from the great body of Peruvian people in the interior. According to traditions, the conquest of the coast tribes took place about one hundred and fifty years before the Spanish conquest. The details of this conquest are given with great precision. We doubt whether any great reliance can be placed upon them. We might remark that while Garcillasso traces the progress of the conquest from the south north, Salcamayhua

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reverses this order, and makes the victorious Incas march from the north to the south. One or the other made a mistake in traditions.

Illustration of Prehistoric Pottery Ware.----------

The Inca conquest of the coast tribes was a very thorough one. The names and traditions of the tribes were blotted out. The word Yunca, by which they are known, is from the Inca language. The same is true of the names of the coast valleys, and yet, from what we have already learned of them, we feel sure that they were very far from the degraded savages Garcillasso would have us believe they were. The inhabitants of each valley formed a distinct community under its own chief. De Leon says: "The chief of each valley had a great house, with adobe pillars and door-ways, hung with matting, built on extensive terraces." This might have been the official house of the tribe.

They were an industrious people, and the evidence is abundant that they had made considerable advance in cultivation of the ground. They "set apart every square foot of ground that could

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be reached by water for cultivation, and built their dwellings on the hillsides overlooking their fields and gardens. Their system of irrigation was as perfect as any that modern science has since adopted. It is an altogether mistaken idea to suppose the Incas were the authors.

We are not without evidence that they were possessed of considerable artistic skill. This preceding collection of pottery ware is not the work of savages. Mr. Markham further tells us that they made "silver and gold ornaments, mantles, embroidered with gold and silver bezants, robes of feathers, cotton cloth of fine texture, etc." We have already referred to the tasteful decorations of the walls of Grand Chimu. "Figures of colored birds and animals are said to have been painted on the walls of temples and palaces." At Pachacamac the remains of this color are still seen on a portion of the walls. This cut represents the head of a silver cylinder found in one of the coast valleys. The ornamentation is produced by hammering up from below.

Illustration of Silver Cylinder Head.----------

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We must now leave the coast regions and investigate some ruins in the interior. We have already spoken of the Lake Titicaca region. Not far from the southern border of that lake we notice a place marked Tiahuanuco. Here occur a very interesting group of ruins. They consist of "rows of erect stones, some of them rough, or but rudely shaped by art, others accurately cut and fitted in walls of admirable workmanship; long sections of foundations, with piers and portions of stairways; blocks of stone, with mouldings, cornices, and niches cut with geometrical precision, vast masses of sandstone, trachyte, and basalt, but partially hewn, and great monolithic doorways, bearing symbolical ornaments in relief, besides innumerable smaller rectangular and symmetrically shaped stones rise on every hand, or lie scattered in confusion over the plain." In fact, all explorers are loud in their praise of the beautifully cut stones found in the ruins.

Illustration of Terrace Wall, Tiahuanuco.----------

We have seen in our review how general has been the desire to

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raise foundations, sometimes of great extent, on which to place buildings. This is true of the ruins under consideration.

Here the pyramid or foundation was faced with stone work.

In this illustration we have a view of such a wall yet remaining in place. The labor expended on such a wall was very great.

We notice in the cut three large standing stones. These are ranged along at regular intervals between. No mortar was used in the construction of the wall. If we examine the large standing stone carefully we will notice on the side a sort of projecting shoulder. The stones of the wall that come in contact with this standing stone are cut to fit this shoulder.

Illustration of Method of Joining Stone, Tiahuanuco.

The remaining stones in the wall were held in place by a peculiar arrangement, illustrated in this cut. Round holes were drilled in the bottom and top of each stone. There is reason to suppose that bronze pins fitted into these holes.

Furthermore, each stone was cut with alternate grooves and projections, so as to fit immovably into each other.

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One case was observed where either the will has entirely disappeared, or else it was left unfinished, and so we have a row of these standing stones, as seen in this illustration. This has been called the American Stonehenge name is inappropriate, because we have no reason to suppose the plans of the builders of the two structures were at all similar.

Illustration of Pillars of Stone, Tiahuanuco.--------

The most celebrated feature of these ruins is the presence of huge gateways, each one cut out of a solid mass of stone. We give a view of the most noteworthy of these gateways. It is now broken, tradition says, by a stroke of lightning. The upper portion is covered with carvings.

Illustration of Gateway, at Tiahuanuco.----------

North of Tiahuanuco is Lake Titicaca. This was the sacred lake of the Incas. We have already referred to the probable origin of

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this feeling. Near the southern end of this lake, on the western side, is the peninsula of Copacabana. Separated by a narrow strait from the northern extremity of this peninsula is the sacred island, Titicaca. According to traditions, the Incas sought, in all ways, to beautify this island. They built temples, and laid out gardens. The hills were leveled as much as possible, terraced, and then covered with earth brought from afar. According to the statements of early writers, pilgrims were not permitted to land on its sacred soil until they had undergone certain preliminary fasts and purifications on the main-land. Landing on the island, they traversed a terrace, and by a narrow passage way they were conducted between two large buildings, where other ceremonies were performed.

The most sacred spot in all the island was a rock in the northern part. Only priests of especial sanctity were allowed near it. The rock to-day presents but the appearance of a weather-worn mass of red sandstone. It is traditionally represented as having been plated all over with gold and silver, and covered, except on solemn occasions with a mantle of rich color and material. Here the sun was believed to have first risen to dispel the primal darkness. To this day the Indians regard it with superstitious veneration. The traveler's guide,

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when he comes in sight of it, removes his hat, and reverently bows to it, and mutters to himself a few words of mystic import.

Illustration of Ruins on the Island of Titicaca.----------

The whole appearance of the island shows how highly it was regarded. In one place the remains of a drinking fountain were noticed. Streams from some unknown source were still bringing to it their limpid burden. Perhaps as noticeable a ruin as any is represented in this cut. It is called the Palace. It is in a sheltered nook. The lake washes the very foot of the foundation on which it stands. It is two-storied. In the lower story were twelve rooms, so connected with each other that but four of them communicated by doors with the outside. The others were certainly dark and illy ventilated. The second story was entered by means of the terrace in the rear. The same statement may be made in regard to its rooms; they did not, however, at all correspond in arrangement with the rooms below. The Island of Coati, but a short distance to the south-east, was sacred to the moon. It has also a number of ruins. The approach to this was

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guarded by a number of terraces.

Illustration of Ruins, Island of Coati.----------

We will describe one more class of ruins found abundantly in the Collao region. These are burial towers, or chulpas. A view of one is here presented. The chulpas are common in the Titicaca basin, and usually occur in groups, and almost always in positions from which a large extent of country can be viewed. The great mass of a chulpa is solid, but within is a dome-shaped chamber, into which the opening seen in the cut leads. Sometimes the chulpas are round, and in some the masonry is of that variety we have already mentioned, called the Cyclopean. Another view of burial towers is given earlier in this chapter.

Illustration of Burial Tower.----------

As a mere description of ruins becomes tiresome, we will now pass to Cuzco, and see of what we can learn of the architecture

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of the Incas. The Incas were, of course, a very rich and a very powerful tribe. All the tribes of ancient Peru had to pay them tribute. We way therefore suppose that the pueblo of Cuzco was well built, the houses large, and imposing, and that the official buildings for worship and tribal business would be commensurate with their importance as a tribe. Yet we have but very few accounts of these buildings. Immediately after the conquest, many of the Spanish leaders settled in Cuzco. They made many changes in the various edifices, and introduced into them many improvements. At present in the modern city we still find portions of ancient walls, and can trace the foundation of various buildings.

Illustration of Terrace Wall at Cuzco.----------

The site of the city of Cuzco is very uneven. It stands on the slopes of three hills, where as many rivulets come together. The ancient builders had to resort to extensive terracing in order to secure level surfaces on which to build. These terraces, built in a substantial manner, and faced with stone, are still standing in many places. In this illustration we have

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a view of such a wall. Observe that the stones are not laid in regular courses, nor is there any regularity as to their size. This is a good example of a Cyclopean wall. Some of the stones must weigh several tons, and they are fitted together with marvelous precision, one stone having as many as twelve angles.

All accounts agree that the temple of the sun was the grandest structure in Cuzco. We present an illustration of one end of it. This end is slightly curving. It is necessary to remark that this end now forms part of the Church of Santo Domingo. The fine-looking window and balcony are modern additions to this ancient building. According to Mr. Squier, the temple was an oblong building, nearly three hundred feet long, by about fifty in width. It formed one side of a spacious court. It did not extend east and west, but rather north-east and south-west. Early chroniclers affirm that the inner walls of this temple were covered with gold. Portions of very thin plates of gold exist in private museums in Cuzco, said to have formed part of this covering. The end of the temple shown in our illustration was covered with a great plate of gold intended to represent the sun. This plate was all in one piece, and spread from wall to wall.

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Illustration of Temple of the Sun.----------

Only fragments of the ancient buildings of Cuzco now exist. But enough are at hand to enable us to describe their general characteristics. As a rule, they were built around a court, the outer surface presenting the appearance of an unbroken wall. These walls are excellent specimens of Inca masonry. All travelers speak in their praise. Mr. Squier says: "The world has nothing to show in the way of stone-cutting and fitting to surpass the skill and accuracy displayed in the Inca structures at Cuzco." There was but one gateway to the court. This entrance was broad and lofty. On the lintels, over the doorway, was frequently carved the figure of a serpent. The apartments were constructed so as to face the court, and nearly all opened upon the same. In some cases rooms wore observed, to which access could be obtained only after passing through several outer rooms. Some of the walls yet remaining at Cuzco are from thirty-five to forty feet high. This would indicate houses of two or three stories.

It is here necessary to state that the structures we have been

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describing are considered by most writers as palaces of the Inca chiefs. Names hive been bestowed upon them--such as the palace of Huayna Capac. It is asserted that each Inca chief built a separate palace. The credulous traveler is even pointed to a pile of ruins said to have been the palace of that mythical personage, Manco Capac. There is some conflict of authority as to the names of these palaces. Modern tradition names one of the most imposing piles as the palace of Inca Rocca, and as such it is described by Mr. Squier and others. Garcillasso De La Vega says this chief's palace was in an altogether different part of the city. Those who call these buildings palaces, think the houses of the ordinary people have all disappeared. It is evident, however, that if our views of the state of society among the Incas be right, that it is a misnomer to call these structures palaces. Some of them may have been public buildings, devoted to tribal purposes. But we need not doubt but that this was the type of communal buildings erected by the natives of Cuzco.

Illustration of Fortress Walls.----------

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We must describe one more piece of aboriginal work. This is the celebrated Fortress of Cuzco. As we have stated, the ancient pueblo, or city@, was built on the slopes of three hills. One of these, easily defended, was strongly fortified, and thus converted into a citadel. Though called a hill, it is in reality a projecting headland. Back of it rise still higher hills.
The portion overhanging the city is very precipitous, in fact, almost incapable of ascent. There is, however, a pathway up this front, ascending in places by stone steps. On this front it did not need very strong fortifications, yet sections of stone wall, serving for this purpose, are to be seen. They have been mostly thrown down, and the stones rolled or tumbled down the hill to be utilized in building. The main defensive works are where the headland commences, from which point the city is not visible.

Illustration of Section of Fortress Walls.----------

In this illustration we have a view of the three massive walls which defended the citadel. They are really wonderful works. In order to understand the construction, we will present an imaginary section of the walls. The walls support terraces, but

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they rose above the terraces so as to form a parapet. To prevent the accumulation of water behind the parapet, channels were cut through the walls at regular intervals to drain them. The height of the outer wall is at present twenty-seven feet; the width of the terrace thirty-five feet. The second wall is eighteen feet high; the width of its terrace is also eighteen feet. The height of the third wall is fourteen feet.

The Incas divided the year into twelve months, but we do not learn how they kept track of the years. In this respect they were behind the Mexicans. Neither do we know of any hieroglyphics for days, or months, or years. In the matter of keeping records, they must have been far below the Mexicans. Our next illustration is that of one of their knot records, or quippos. It is a very rude attempt to assist the memory. To the base cord are attached other threads of various colors, and tied in various ways. We, of course, know but very little about them. It is claimed, however, that a red thread signified a soldier, or war; a yellow one signified gold; a white one silver, or peace; a green one wheat, or maize. A single knot is said to have stood for ten; two knots, twenty; a knot doubly intertwined, one hundred, etc. Also the position of the knots on the threads was to be considered, their distance apart, the way

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the threads were twisted, and many other details. It is manifest, however, that this system of records is of very little value, and is way below the picture-writing of the Mexicans.

Illustration of Quippos, or Knot Record.----------

Take it all in all, the Incas are indeed an interesting people. We believe, however, their culture has been greatly overrated. Our object in this chapter has been to give an outline of the Incas and the tribes subject to them. It is impossible in these few pages to give more than an outline. Should the reader, by the perusal of these pages, acquire an interest in the culture of the Andean people just before the Spanish invasion, and be thereby induced to continue his investigations, the writer will consider such a result reward enough, even though the conclusions reached should be totally opposed to those set forth in this chapter on Ancient Peru.

REFERENCES

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(1) Xeres: "Report on the Discovery of Peru," Markham's translation, Hakluyt Society's Publication.

(2) Buckle's "History of Civilization," chap. ii.

(3) Squier's "Peru," p. 9. The Vicuna is a species of the llama.

(4) Squier's "Peru," p. 12. The quinoa is a species of plant of the same genus as our pig-weeds. But it is a larger plant, and its seeds give a very nutritious meal. The biscacha is about the size and shape of the rabbit. It belongs to the chinchilla family. The llama is the only representative of the camel family on the western hemisphere. There were three species of this genus in Peru, the llama, alpaca, and vicuna. These domesticated and constituted what the Spaniards in their first reports called sheep.

(5) Squier's "Peru," p. 12.

(6) Morton's "Crania Americanae," pp. 6, 83. Winchell's "Pre-Adamites," p. 388.

(7) H. L. Morgan. "Systems of Consanguinity and Affinity of the Human Family," p. 255; other works by the same author, "House and House-life of American Aborigines," and "Ancient Society."

(8) The Quichuas were a closely related tribe to the Incas, and their name has been given to the language of Peru. But as the Incas were the ruling tribe, their name should have been given to this family of languages.

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(9) "The Geographical Distribution of the Tribes of the Inca Empire," in "Journal of the Geographical Society," Vol. XLI, p. 281, *et seq*.

(10) "Peru," p. 571.

(11) Foster's "Prehistoric Races," p. 375. The Zuni Indians have indeed preserved a tradition of the visit of Coronado three hundred and fifty years ago, but in such a form that no one not acquainted with the facts would guess the meaning. "Fifth Annual Report Archaeological Institute," p. 40.

(12) More than one-third of Mr. Prescott's quotations are from this authority.

(13) Morton.

(14) This idea was largely based on the differences of the skulls. On this point see "Fourth Annual Report Peabody Museum." Some authors speak rather vaguely of the ancient race of the Titicaca basin. We know of no good foundation for such expressions.

(15) Garcillasso impresses on his readers the idea that the Incas was the only tribe at all civilized. The Aymara Indians were certainly as far advanced as the Incas, and even surpassed them in the art of cutting stone, if we conclude the ruins at Tiahuanuco to be of Aymara origin. The tribes of the coast region were certainly not far behind. The Muyscas, of Bogota,

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who were never under the dominion of the Incas, were yet possessed of a high degree of culture.

(16) Markham in Forbes's "Aymara Indians," p. 111.

(17) "Peru," p. 427.

(18) "It was from Cuzco the nearest point to the sun-rising." (Markham.)

(19) Their name for the Titicaca basin.

(20) Markham, in Forbes's "Aymara Indians."

(21) *American Antiquarian,* Sept., 1884, p. 295, *et seq.*

(22) It is manifest that, during the centuries of slow development which the Incas underwent, they had a great many chiefs. How many we shall never know. Garcillasso gives us a list of fourteen, including Huascar and Atahualpa. Montesino generously increases this number to one hundred and one. Neither of them knew any thing positive about it; but this latter number is the more reasonable of the two. Mr. Markham, who goes at the problem in another way, thinks there were five historical Incas, counting Huayna-Capac the last. He surmises that the first may have flourished two hundred years before the conquest.

(23) Markham's Garcillasso's "Royal Commentaries," Vol. I, p. 66.

(24) Markham's translation, p. 151.

(25) Morgan's "Ancient Society," p. 100.

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(26) Our authority is Christoval Molina, a priest of Cuzco. He made a report to the bishop, which must have been written some time between 1570 and 1584, on the "Fables and Rites of the Incas." This was translated by Markham, and published by Hakluyt Society in 1873. He obtained his information by gathering together a number of aged Indians, including some priests, who had participated in these ceremonies in the days of the Incas.

(27) This writer, a native Indian, wrote about the same time as Garcillasso.

(28) "Fables and Rites of the Incas," p. 105.

(29) "Peruvian Antiquities," p. 105.

(30) "Peru," p. 5.

(31) Many such quotations could be given, not only from Garcillasso, but from Molina, Salcamayhua, and others.

(32) Address before the Historical Society of New Mexico.

(33) We can not help wondering if the Incas did not have two chief executives. This would make them similar to the Iroquois, and most of the more southern tribes, such as we have already seen to be true of the Mexicans. Mr. Bandelier says there is abundant proof that the Incas had two chiefs--one the "dispensing Inca," the other the "speaking head." ("Archaeological Tour in Mexico," p. 167, note 6.)

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(34) "Travels," Markham's Translation, p. 164.

(35) In Forbes's "Aymara Indians," p. 109.

(36) Indian architecture from the Sioux lodge to the houses of Uxmal, Mitla, and Tiahuanuco, is only understood through Indian social organization." (Bandelier.)

(37) "Peru," p. 214.

(38) "Two Years in Peru," Vol. I, p. 283.

(39) Markham's "Introduction," to "Report on the Discovery of Peru."

(40) "In this case it is nonsense to talk of hundreds." (Hutchinson.)

(41) Markham, in Journal of the Royal Geog. Society, Vol. XLI.

(42) Squier's "Peru," p. 375.

(43) The dimensions are: Length, thirteen feet five inches; height above ground, seven feet two inches; thickness, one foot six inches. (Squier.)

(44) Squier's "Peru," p. 336.

(45) Markham, in "Journal of Geog. Soc.," Vol. XLI.

(46) "Peruvian Antiquities," p. 110.

END OF CHAPTER XVI AND END OF BOOK.**********

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